RAILROAD MAGAZINE

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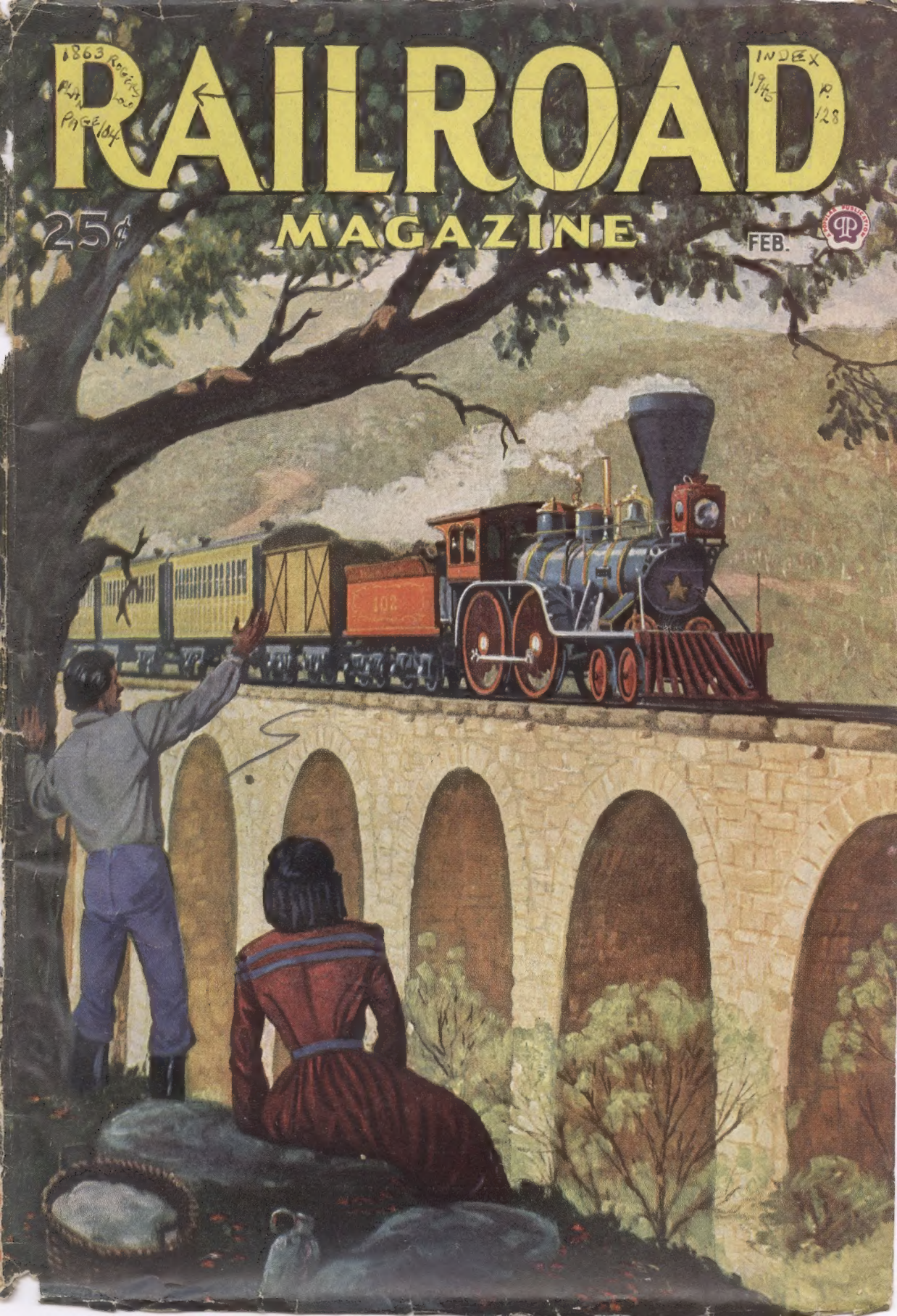

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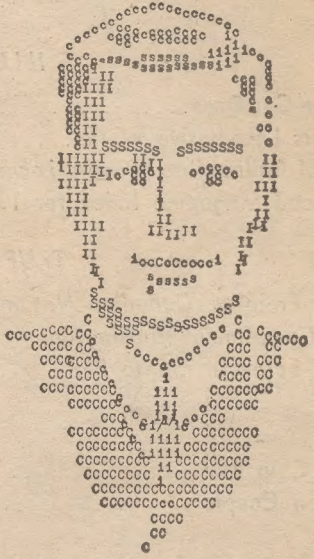

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Horse-car ticket, Brooklyn City Railroad Co.

RAILROAD MAGAZINE

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Henry B. Comstock, ***Editor*** **Freeman H. Hubbard,** ***Research Editor***

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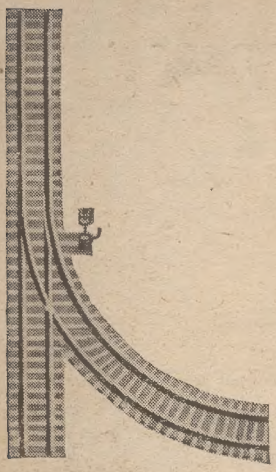


Railroad Dollars Switch Back to All of Us

In their essential service to the nation, the American railroads during 1945 again hauled an enormous tonnage of freight for an average charge of less than one cent per ton per mile, and carried millions of service and civilian passengers for fares averaging less than before the *First* World War. For this job the railroads received less than 9 billion dollars. And here's where the money went:

41% FOR WAGES

This money, paid to 1,400,000 railroad employees, buys homes and furniture, food and clothing, education, insurance—helps make local business prosper.

32% FOR MATERIALS, ETC.

More than two-thirds of these dollars was paid to a broad cross section of industry which furnishes railroad supplies. They help to make better business and more jobs in every state and almost every county in the country.

16% FOR TAXES

Railroad taxes are spent for the general support and services of government—national defense, public safety, schools, hospitals. None of this money is used to provide tracks for trains—although some of it is spent by government to help provide and maintain the highways, waterways, and airways used by other forms of commercial transportation.

6% FOR INTEREST, RENTS, ETC.

The greater part of this was paid to those who have loaned money to the railroads and receive interest in return—including the millions of men and women who have an investment in railroads through their life insurance policies, savings bank deposits and the like.

3% FOR DIVIDENDS

This three cents out of each dollar was paid to about a million individual citizens who have invested their savings in railroad stocks—helping to provide the "tools" with which railroad employees do their work.

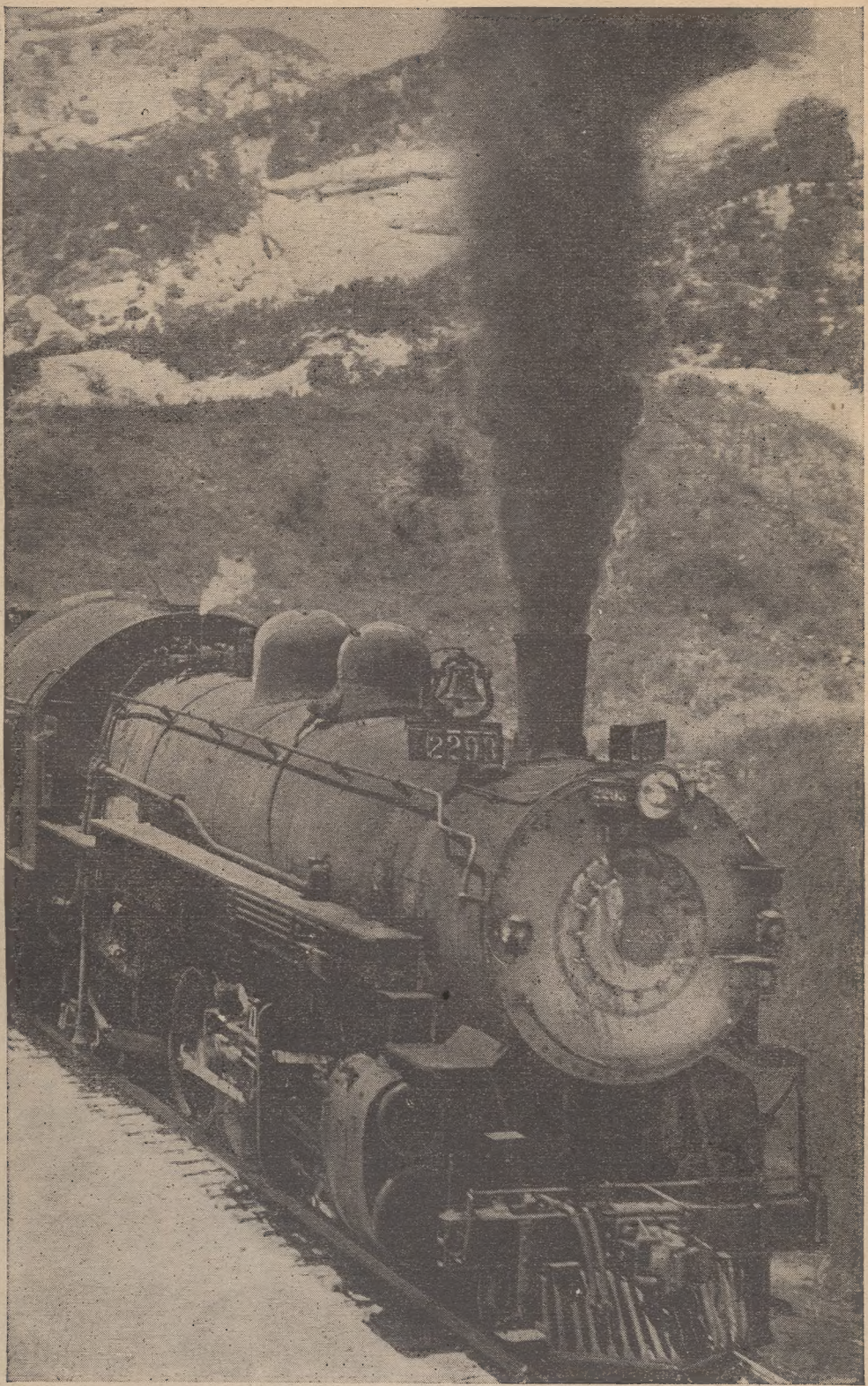
2% TO WORK FOR THE FUTURE

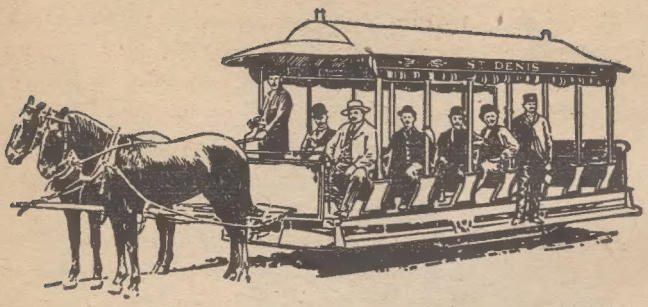
That last 2 cents of the railroad dollar is for investment in the better railroads which continuing research is making possible—better equipment—better service—more jobs—to help provide, *for us all*, in better and better fashion, the rail transportation upon which this nation depends.

AMERICAN RAILROADS

Thunder in the Cajon

UNION PACIFIC power battles the big hill east of San Bernardino, Calif., under trackage right agreement with the Santa Fe. Among the most spectacular of all western rail settings, Cajon Pass has long been the stamping ground of such ace photographers as Placentia's Herb Sullivan, who took this dramatic action shot





Horse-Car Days

For Nearly a Century, Street Railways of North America Used Dobbin as Motive Power

By FREEMAN H. HUBBARD

Author of the book "Railroad Avenue"

THE LAMENTATION we hear in some quarters over the impending doom of Manhattan's street-cars would be more touching if it did not have a vaguely familiar ring. After the end of 1946, we are told, no trolleys will run on the now heavily populated island that Dutch settlers bought from the Indians for twenty-four dollars. The news is sad indeed for all who are sentimentally attached to this form of transportation. It was equally sad twenty-eight years ago when nostalgic oldtimers almost wept over the passing of the city's last horse-car. And going back still further, to 1884, to a copy of the *New York Tribune* so brown and brittle that it is falling apart, we find an item that seems to have real pathos:

"In a few weeks the Broadway bus will be but a memory. At the edict of Jacob Sharp it will have faded into the limbo of the past and have become a subject for the folk-lore of the future . . ."

Brushing away a tear, we delve still deeper into history to learn how Mr. Sharp put an end to that noble institution, the Broadway omnibus, which had been serving the public faithfully since 1831, and laid rails on the cobble-stoned city streets for the operation of horse-cars.

The first omnibus to rattle over New York streets was operated by

one Abraham Brower in 1827; and from then on, until omnibus service was finally vanquished by the horse-car, this form of traction was an integral part of city life. For more than half a century the bus and the horse-car overlapped and were rivals, the one gradually waning, the other expanding.

During the Civil War and for nearly two decades afterwards, New York's lower Broadway was so crowded with omnibus traffic that pedestrians had to risk their lives to dart across the street. A count of such vehicles passing City Hall in thirteen hours showed 3035 northbound and 3162 southbound—an average of four per minute each way! The tally was ordered by "Jake" Sharp to show the need for a street railway, which he proposed to build.

Not until 1884 did Sharp win his battle for a horse-car franchise. The omnibuses were then pulled off Broadway, but those on Fifth Avenue remained in service until motorbuses finally replaced them in 1905—and horse-car faded into oblivion.

New York's earliest street railway is usually traced back to the New York & Harlaem Rail-Road Company

NEW YORK: Scene on 42nd Street between 5th and 6th Avenues a half-century ago

Photo from H. I. Sutherland

that began with horse-drawn equipment on 4th Avenue between 23rd Street and the Harlaem River under a grant of the state Legislature and a city ordinance signed December 22, 1831.

NEW ORLEANS was the second city to try the horse-drawn car. Many strange vehicles and modes of operation were tried out there. A bizarre-looking double-decker was put on in the early 1830's.

"It is unlike any employed in the North," editorialized *Ballou's Pictorial Drawing Room Companion,* from which our antique print was taken, "and will doubtless prove interesting to our readers, now that the introduction of horse railroads here is a settled thing. It accommodates both outside and inside passengers. Entrance for the latter is at the extremities, while the upper-deck passengers mount to their lofty station by a flight of steps accessible from both sides. In fine weather the roof seats must be quite pleasant."

Boston's first street-car began running March 26, 1856, from Cambridgeport, Mass., over the bridge to a point in Boston on Cambridge Street between Charles and West Cedar streets. Powered by hay-burners, it made five trips on the opening day, each time carrying forty passengers.

In 1858 Philadelphia followed New York, New Orleans and Boston into the horse-car era. Before that happened, a fight against such conveyances was waged by orators and newspapers and in the courts. Said the conservative Philadelphia *Sunday Dispatch* of June 21, 1857: "It is perhaps scarcely worth while to allude to the fact that in New York City they kill one person each week on city railroads and mangle three

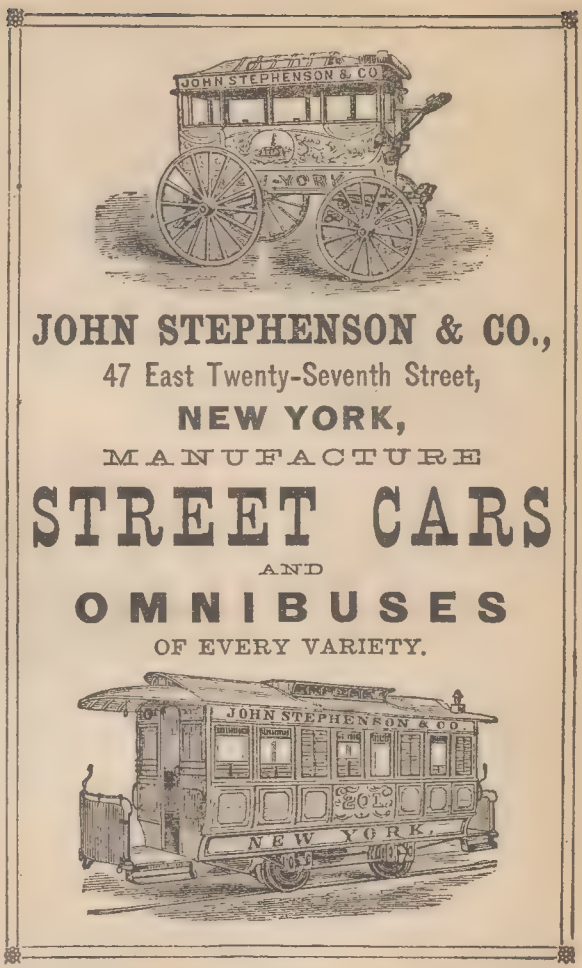
NEW ORLEANS, the second American city to adopt equine street-cars, believed in being original, to say the least

or four on an average in the same space of time. Human life is really of little value nowadays."

Staid and respectable folks of Baltimore also sought a legal injunction against the encroachment of horse-cars; but in 1859 radical elements prevailed, and Dobbin clumped over rough paved highways of the Maryland metropolis between the shafts of a rail vehicle. From then on, horse-cars spread rapidly to Cincinnati, Chicago, Cleveland and other cities. The era had arrived.

A GRIPPE EPIDEMIC of 1872 attacked the horses, who had been weakened by overwork, weather conditions, and unsanitary stables. Thousands died. In New York and Philadelphia ox teams were used to keep the wheels of transportation rolling. In Boston a gang of men, down-and-outers, were paid a dollar a day to pull the cars, like jinricksha boys in the Orient, until a hurried shipment of horses from other localities ended the undignified performance.

Golden age of the horse-car was the decade between 1880 and 1890. A Boston transit magnate at that time told a convention of the American Street Railway Association that the country had more than 100,000 horses and mules engaged in pulling 18,000 cars on 3000 miles of track. How the industry had grown! But while the lines were making money, the service they rendered was not above criticism.



From H. I. Sutherland, 134 Morsemere Ave., Yonkers 3, N. Y.

BUILDER'S AD of 1873. A horse-car built by Stephenson in 1855 may be seen in New York City Museum, 5th Avenue at 104th Street. It operated on 8th Avenue, the body turning on a pin when the car reached the end of the line

In 1882 your author's grandfather published a 672-page book entitled *New York by Gaslight*, by James D. McCabe, which has a lot to say about horse-cars, none of it glamorous. For instance:

"The majority of these vehicles are dirty, badly ventilated, and full of vermin. In the winter the floor is covered with straw as a protection from the cold, but this soon becomes

foul and constitutes an intolerable nuisance . . .

"A crowded car is a favorite spot for pickpockets to ply their trade. These generally work in parties of two or three, to render detection difficult and escape easy.

"The drivers and conductors are often brutal wretches, and insult and maltreat their passengers in a manner that would be incredible were not the facts so well attested. Many, on the other hand, are honest and courteous. All are overworked and poorly paid. They are on duty about fifteen or sixteen hours out of twenty-four, and have no holidays, unless they choose to forfeit a day's pay. The drivers receive from $2.25 to $2.75 and the conductors from $2 to $2.50 *per diem* . . .

"The practice of 'knocking down' is carried on very extensively on the horse-car lines, and the companies suffer heavily by it. They take every precaution to hire good men, and have a thorough system of espionage at work to detect and stop the dishonest practice. Their spies travel constantly over the road and note the number of passengers carried on the cars they are appointed to watch. When the conductor's report is handed in, they examine it and disclose any inaccuracies. The conduc-

VOLGA BOATMEN, American style. In 1872 when an epidemic laid many horses low, some transit companies suspended service entirely. Others used oxen, and at least one paid laborers a dollar a day to pull the cars

tor, it is said, often divides the stolen money with the spy, or 'spotter' as he is called, and thus secures his silence. . . . Half the conductors on the line make $3 or $4 a day above their wages. It's easy enough when you know how to do it."

Best known of all the ditties that centered around the horse-car was this gem:

A blue strip-slip for a three-cent fare
A pink slip for a five-cent fare.
Punch, brothers, punch with care,
Punch in the presence of the passenjare.

Trip-slips were the company's record of fares collected, pink for adults, blue for children. Each measured about two by eight inches and was numbered from 1 to 30. At the beginning of his day's work the conductor was given a certain number of slips and signed for them. These he kept in his pocket except when he took a slip out to punch, one numeral being punched for each fare. In the days before cash registers, some punches had a tiny bell which rang whenever the metal jaws came together over a trip-slip. By listening for the sound of this bell you could determine the conductor's honesty.

At the end of his day he turned in all his slips, both punched and unpunched, together with the money received from passengers. Since the dinky little cars swarmed with spotters, it behooved a man to punch a slip whenever he took up a fare. The penalty for holding out on the com-

Photo from A. E. Hickerson, Box 1411, Lincoln, Neb.

PLODDING MULES in Lincoln, Neb., hauled passengers to the Fair Grounds, the Stock Yards and the Prison, whichever destination the riders preferred. The names of those three places are painted on the side of car No. 6

pany was immediate discharge and sometimes fine or imprisonment.

"Conductors decided ruefully that honesty was not only the best policy but was practically unavoidable," comments Clif Belcher in telling us about the system as practiced on the Union Railroad of Providence, R. I., sixty years ago. "The only way to beat the game was to get unauthorized slips, but clerks at the business office forestalled snatching. Their

BUILT by Pullman Palace Car Co. in 1880 for Saginaw (Mich.) street railway

very jobs depended on accurate allotting. The company needed revenue to maintain its ten stables, feed its 1350 horses, and pay its 450 employes. With 150 cars bouncing over 53 miles of track, the brass hats had to consider the possibility of a pilferer in uniform."

NEVERTHELESS, there is a bag of tricks to every trade. How could a sly conductor purloin extra slips? Well, he might bribe an office boy at the plant where the pasteboards were printed; but this was not easy, as no good printer wanted to jeopardize both his reputation and his contract with a street-car company through dishonesty or negligence.

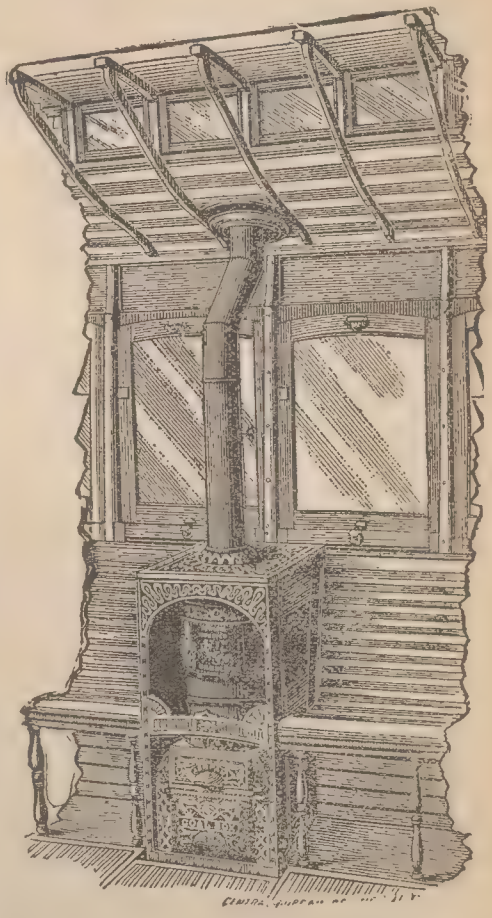
The printer would see to it that every bit of cardboard stock used in printing those slips was accounted for, even including the material spoiled in printing. Six forms were printed on a sheet. These were carefully cut into slips, counted, bundled into lots of 500, sealed and delivered by a trusted employe to the transit company's business office. There they were accepted only after the number of bundles had been ascertained and the seals examined.

Thus the chance of grabbing off extra slips was pretty slim. Of course, there was the possibility of hiring a crooked printer to counterfeit the trip-slips, but this racket was expensive as well as risky, and so was very seldom practiced.

"Stop us if you've heard this one," says Frank P. Donovan, Jr., of Philadelphia. "An English-born official of a horse-car company decided to give his children names indicative of his position, so he called his son Oscar and his daughter Caroline."

One of the vital problems in mass transportation which agitated the brass hats of those days was whether or not a mother should be permitted to nurse her baby at the breast in a public vehicle. The following solution was offered by the *Street Railway Journal* in 1885:

"A baby can best judge of the necessity and expediency of taking its usual refreshment; and when it has signified its imperial wishes to its mother, she had a divine right to turn



EARLIEST horse-cars had no heat in winter—just straw on the floor to keep your feet from freezing. Various stoves were tried out, including the rococco effect pictured here, but all of them were fire hazards

HORSE-CAR LINES had their share of strikes and riots. In March '88 New York and Brooklyn crews rebelled against 14-hour working day, forced a reduction to 12 hours

any conveyance into a dining-car if she pleases, and there is no indelicacy in the act."

Another technical item was printed in the *Journal* that year as follows: "What is the matter with the riding of new car No. 33 of the Fulton Avenue line of the Brooklyn City Railroad Company? Passengers with false teeth keep their mouths firmly closed to prevent their being shaken out. Would suggest that conductors be provided with ear trumpets to better understand the questions put to them by passengers."

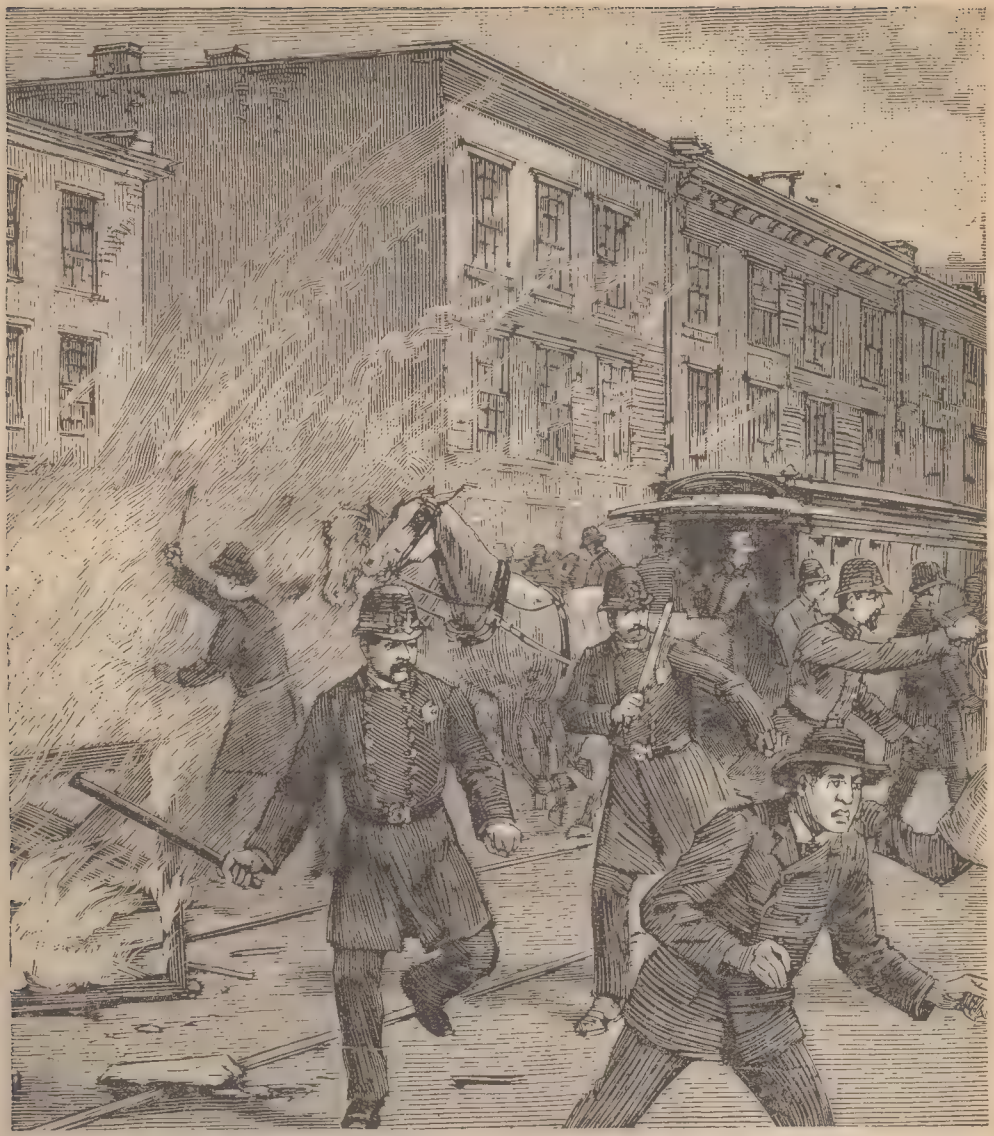
Brooklyn was then a separate city, third largest in the country. Not until years later did it become merged with New York.

"An amazing spectacle," as the newspapers termed it, occurred in March, 1888: not a surface car was running on the streets of New York or Brooklyn! This phenomenon started on the four lines of the Dry Dock & Battery Railroad, whose horse-car drivers and conductors resented being forced to endure a fourteen-hour working day at two dollars *per diem,* in addition to "certain oppressive and arbitrary rules enforced by timers, starters and other petty officials."

The crews stated their grievances in a petition to William White, the DD&B president. Mr. White disliked collective bargaining and determined to fight it out.

THE STREET-CAR men's union called a strike. This union was an affiliate of the Knights of Labor, a national body comparable to the present-day AFL or CIO. The strike immediately crossed the East River into Brooklyn, because one of the DD&B directors was president of the Atlantic Avenue Railroad, which owned seven Brooklyn car lines. More than 16,000 transit employes were involved.

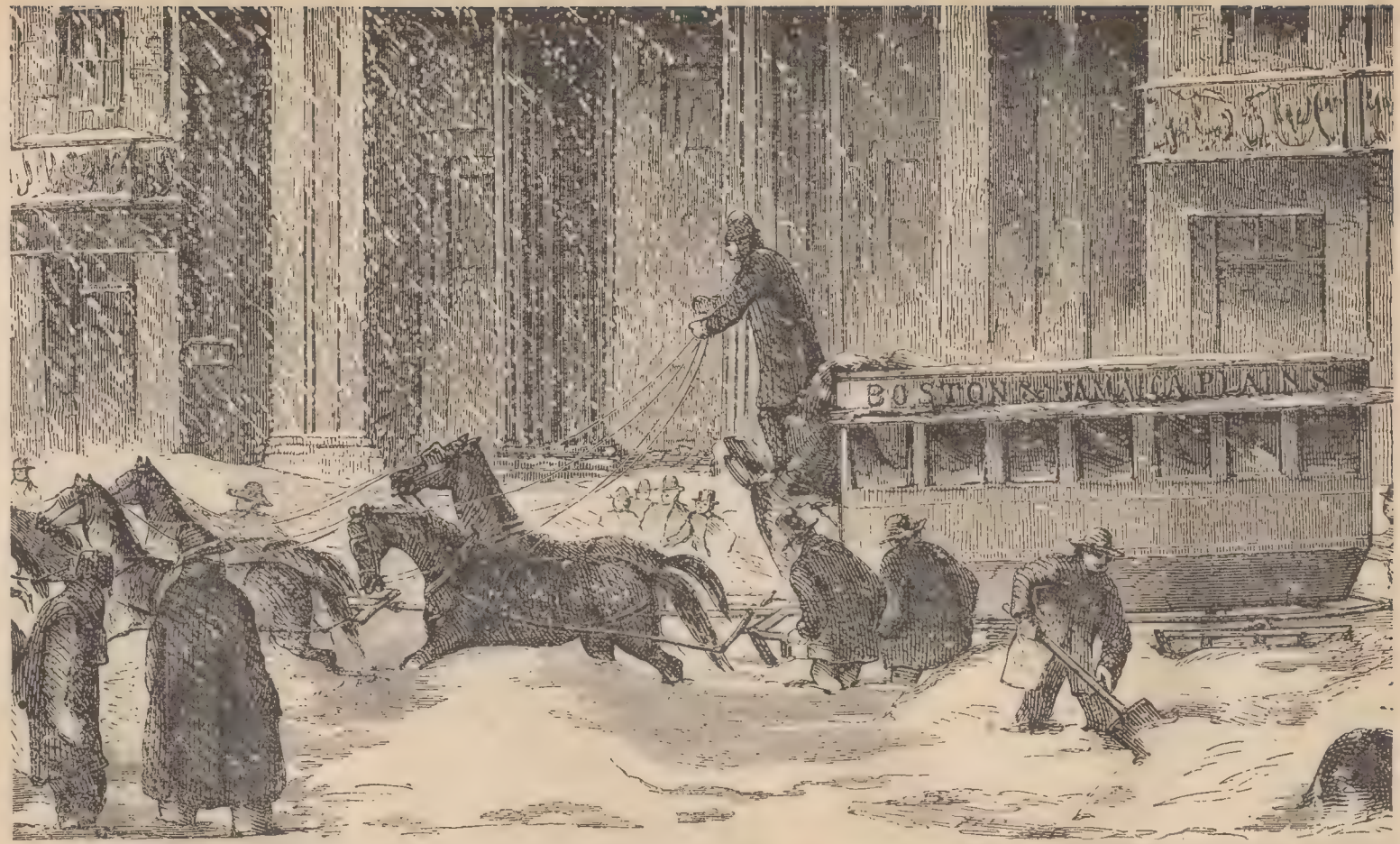
DD&B tried to operate a cross-town car on New York's Grand Street Line under police protection,



but strike sympathizers spilled a load of coal on the track. Additional police rushed to the scene in horse-cars. The mob overturned these cars, hopelessly blocking the advance.

The next day another effort was made to run a Grand Street car. This time Police Superintendent Murray and 900 of his men personally escorted the lone vehicle from the barn to Desbrosses Street Ferry and back, forcing their way through mobs and barricades over the entire route. To quote *Frank Leslie's Illustrated Newspaper* of March 13, 1886:

"The experiment was anything but a triumph for the company. On each side of the luckless car—which, it is needless to say, carried no passengers save the improvised conductor and driver—were drawn up about 65 policemen of the Broadway and Police Boat squads, three abreast. In front of the car were five platoons of police



From Beard's Pictorial Drawing-Room Companion

WINTER STREET, BOSTON, IN 1857. When heavy snow covered the tracks, some cars were converted into sleights, their wheels being removed and bodies mounted on runners

in double column, led by their respective captains and sergeants, with the roundsmen on their flanks. Between the second and third platoons Superintendent Murray and Inspector Steers, with three of Inspector Byrne's detectives, took their positions, with six sergeants as aids. In the rear of the car three platoons were drawn up as in front, and with a line four deep. Besides this, a long line of police on the extreme flanks were stretched from the head of the column to the last platoon."

Thus formidably escorted, the car progressed very slowly amid groans, catcalls and even missiles. The unhappy bluecoats were kept in a lather of sweat clearing a path through such obstacles as upset cars and drays, piles of lumber and bricks. Between Goerck Street and the ill-famed Bowery not less than sixteen loads of coal had been dumped on the track; at Grand and the Bowery a long line of cars lay, wheels up.

In Brooklyn the same day a similar test run was made by the Atlantic Avenue Railroad, against similar tactics. But no attempt was made to negotiate with the union.

At length the Knights of Labor, seeing that the public were with them, threatened to tie up the elevated roads and ferry service of the two cities; and the brass hats quickly came to terms. Under the settlement the working day was cut from fourteen to twelve hours, with no change in pay and a half-hour off for lunch. It was a big step toward the present eight-hour day—that, combined with a strike of Chicago horse-car drivers and conductors in October '88.

IN CHICAGO, cable trains, consisting of an open "grip" car and a closed trailer, were put into service about 1890. Horse-car routes were operated on Indiana and Archer avenues as feeders to the lines on State Street and Wabash Avenue, the latter usually referred to as the Grove Avenue line from its suburban destination.

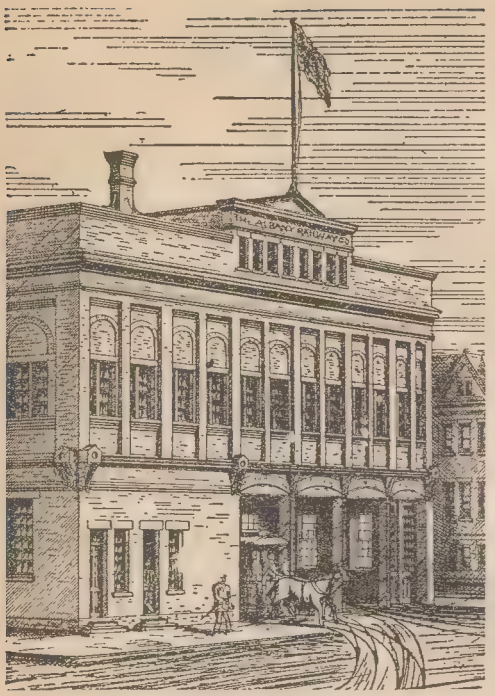
These horse-cars continued downtown as second trailers to the cable trains, the Indiana Avenue line running into Wabash at 18th Street and the Archer Avenue angling into State Street. At the junction points a flying switch was made, the steeds being driven off to one side and unhooked "on the fly" just before the coupling occurred. Indiana Avenue cars often were derailed, while horse-drawn, whereupon all the passengers would get out and push the little four-wheelers back onto the track.

The various lines were marked by different-colored side panels on the cars, blue for Wabash, red for State, green for Indiana, and yellow for Archer Avenue. For many years after the general discontinuance of equine transit in Chicago a single horse-car was driven over the Jackson Street crosstown line in the Loop district, to keep the franchise alive, as was done also in New York City.

Peter Nielson, an old-time driver of Chicago's Division Street line, tells us that in 1884 the horses received excellent care, working only four hours a day at a time when the crew toiled fourteen.

"They were so accustomed to the bell signals," he adds, "that they started and stopped without a word from the driver."

"About fifty years ago," recalls O. B. Fensholt of Beloit, Wis., "while riding an open horse-car in Chicago with my mother I was the proud owner of a whistle, similar to the one the conductor used to signal the driv-



STABLE and car house of the Albany Railway, Albany, N. Y.

er. The conductor blew once for stop, twice for go. The horses, accustomed to a couple of toots, would start as soon as they heard them, without waiting for orders from the driver. Every time the car stopped for riders I would blow my whistle twice, whereupon the horses would move before the passengers had time to get on or off. Instantly, then, the conductor would blow one blast to stop again. This farce kept up for several blocks. I was having a lot of fun—until the conductor found out where the whistle came from; then he was ready to throw my mother off for letting me behave so outrageously."

Turning to the serious side, Mr. Fensholt writes: "I recall the time a Chicago horse-car gang was putting in a crossing over the Milwaukee Road tracks. The railroad boys tried to block them, and ran a switch engine back and forth over the site so the work could not be done. However, they were allowed to do this only five minutes at a time, alternating with five minutes of keeping the road open. With every five-minute lull the street-car gang would lay a little more section of crossing, until finally the job was done. There was a bigger crowd watching and cheering that stunt than any other construction project I've seen."

IN HIS BOOK, *Fares, Please!**, John A Miller says the problem of establishing street railways was simple compared with the job of operating them after they were built.

"The most serious of the operating problems centered in the horse himself," Miller goes on. "Some of the larger street railways had a thousand or more of them. A good animal for this kind of work cost about $125. This was less than the cost of a car, which averaged around $750; but it was necessary to have several shifts of horses for each car, so that the total investment in animals was usually greater than in equipment. As a matter of fact, an early report of the American Street Railway Association states that about 40 percent of the entire investment of the average company was in horses and stables."

From the same book we learn that: "A survey by the *Street Railway Journal* disclosed that two mules could be fed for the cost of one horse, and that they could do one-third more work. They could stand the cold as well as the horse, and could stand the heat better. One drawback, however, was that a mule had prac-

*Published in 1941 by D. Appleton-Century Co., New York. The author is an occasional contributor to *Railroad Magazine* and was the last editor of *Transit Journal*.

tically no resale value when he got too old to pull a car, whereas, a horse could be sold for about three-fourths of the original cost."

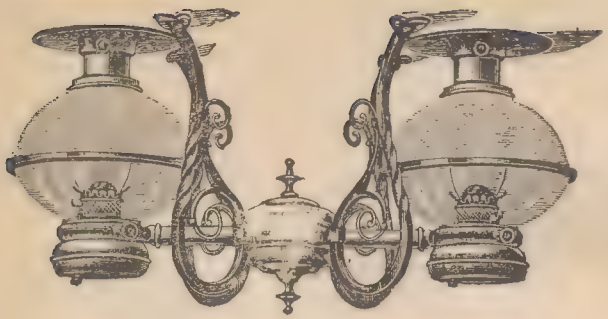
A sidelight on horse-car operation was the disposal of manure. This by-product, sold as fertilizer, yielded the average company from two to six dollars annually per horse, depending largely upon the section of the country. In New York, the Third Avenue Railroad boasted nearly $14,000 of revenue in a single year from this source. It is well known that manure added thousands of dollars to the Vanderbilt fortune. The annoying problem was how to store the stuff while accumulating enough of it to market. You couldn't keep manure in a stable without impairing the horses' health, and you couldn't pile it up out of doors without hearing loud complaints from nearby residents.

C. B. Fairchild, an editor of *Street Railway Journal,* wrote in his handbook, *Street Railways,* published in 1892: "It is by no means a foregone conclusion, as is so often stated, that mechanical power will eventually supersede animal power on all street railways." This was a rash statement, but remember that Mr. Fairchild was writing at about the peak of the horse-car era.

The editor pointed out that climate governed choice between horses and mules, the latter being used largely in the South. He wrote also: "Daily mileage for street-car horses ranges from ten to twenty-two, with one day in seven for rest. Horses that work on paved streets have to be re-shod sometimes every three or four days,

Photo from Al Comstock, Leonia, N. J.

DEPOT of New York's Third Avenue Railroad, including offices, car barn and stable. Since car horses usually spent 21 hours a day in stables, intelligent owners made them as comfortable as possible, for economical as well as humanitarian reasons. It was realized that a beast poorly cared for wasted energy in resisting annoyances that should have been given to pulling cars



DIM, SMOKY, SMELLY oil lamps lit horse-car interiors at night. In 1892 J. D. Smith (New York) advertised these twins as "Our latest production in the way of a double centre car lamp, designed to meet the growing demand for something handsome and artistic"

occasionally every twenty days. The car horse usually passes twenty-one of his twenty-four hours in the stable, hence the necessity for making him as comfortable as possible, for both humane and economical reasons."

HERE is the horse-car version of Rule G, taken from a company rulebook: "Conductors and drivers must abstain from smoking in the car and must never visit a saloon." Nothing is said against the chewing of Navy Plug while on duty, except this: "A driver must not spit tobacco juice so that the wind will carry it to the passengers."

Dignity was imperative. "A conductor must abstain from lounging around the street corners . . . and from whistling to drivers of cars or vehicles when passing in the street." Of course, if he felt like whistling to a young lady, that was his business.

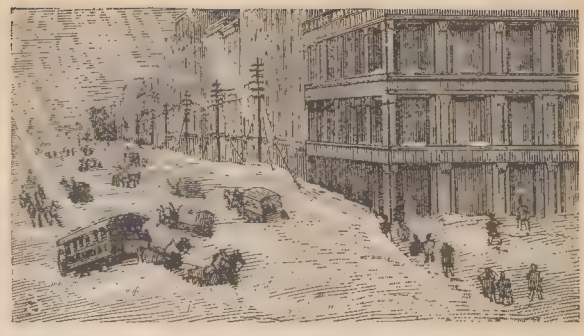
Another rule of the 1890's stated: "While on the car he must abstain from reading books or newspapers."

The crew were required also to respect religion. "On the Sabbath the bells on the horses must be muffled, and the speed reduced to a moderate pace when passing churches or in their immediate vicinity." There must be no naughty words like "hell" or "damn." The rulebook tells us that "boisterous, obscene or profane language" is forbidden.

"Universal politeness" in the treatment of passengers was obligatory. "The temper must be controlled and

THE ONE-SPOT served predecessor of El Paso (Texas) Electric Company for 20 years, ending January, 1902

a wordy war never engaged in." Not only that, but: "The conductor of an open car must, when necessary, get off and point out seats to passengers who may desire to ride but think the car is crowded." And: "When a lady leaves the car, the conductor must see that her dress is clear of the car before giving the signal to start."



MOUNTAINS OF SNOW covered New York street-car tracks in the famous blizzard of March '88, when even steam roads were hard hit

However, if a male passenger is drunk or annoys one of the opposite sex, he must be ejected politely by the conductor or, if the task is too strenuous for one man, with the driver's help. When a rude fellow is thrown off the car, "the conductor must return his fare, if paid." We can imagine a crew giving a bum the royal bounce—not very gently—and hurling the nickel after him on the sidewalk with a lively exchange of epithets.

Deadheads are fully listed in this tidbit: *"Who rides free:* the president, general manager, secretary, treasurer, superintendent, chief conductors and inspectors of the company, and firemen and policemen in full uniform. . . All others must pay fare." Nothing is said about spotters. Naturally, they paid their nickels like ordinary passengers, and were reimbursed later.

Fares were collected for "trunks, large packages, etc.," but: "The conductor must not allow open parasols or umbrellas in open cars." Presumably an open bumbershoot in a *closed* vehicle was according to Hoyle.

A man was not allowed to give his brother a Christmas present if they both worked for the same horse-car company. He could not even treat a fellow employe to an ice-cream soda or a ferryboat ride. The rule on this point was very explicit. "A conductor must neither give nor receive from any driver or other in the company's employ any fee, gift, gratuity, cigars, treat or other entertainment whatever."

Horse-car lines had no callboys on the payroll. "In case of snowstorms," said the rulebook, "all conductors and drivers must report to the foreman for orders."

There were many humane regulations for the care of horses, such as:

"Whipping horses is strictly forbidden. No whip shall be carried without special permission."

"The driver is not expected or required to drive a lame or disabled horse."

"In all places where the street is dug open for paving or other purposes, so as to endanger the horses, they must be detached."

"The driver must either get down from his car and remove from the track all stones, nails and other things injurious to horses, or call the conductor to do it."

DENVER street-cars date back to January 10, 1867, when a horse-powered city railroad was incorporated. The first line, with bobtail cars, started in West Denver at Dan

Witter's house on 7th Street, crossed the bridge to 15th Street, up to Champa, and to 23rd. Denver then had 5000 inhabitants, most of whom, it appeared, preferred to walk rather than pay a dime fare on the new road, so the company languished along in a sorry financial state. However, the horse railroad gradually brought about a real-estate boom. The city grew and the road expanded. But with modernization, Denver turned to cable cars in 1888; and the horse-cars soon became scarce.

"In 1906, when I first came to Colorado," writes Charles A. C. Illman of Denver, "a horse-drawn car was operating over a route about one mile long between Englewood and Cherrelyn, south of Denver. The horse would pull the four-wheeled conveyance up the hill between the two points and then he would board the rear platform of the car by means of a specially-built ramp and ride down grade clear back to Englewood. The line was single-tracked, with no turn-around. It was named for the cherry trees which abounded there."

C. B. Long of Kansas City, Mo.,

Photo from historical collection of Title Insurance & Trust Co., Los Angeles

Photo from E. J. Haley, 4116 Decatur, Denver

HORSE on Cherrelyn line (Colo.) pulled car uphill, then climbed onto rear platform and coasted down. Similar arrangement existed on Ontario & San Antonio Railroad (Calif.), except that mules and trailer were used

who also recalls the Cherrelyn route, says the horse seemed to enjoy his ride as much as did the paying passengers. E. J. Haley of Denver reports that he saw it in operation as late as 1919, shortly before it was abandoned. The line, which survived by many years Denver's horse-car service, was popular with local residents as well as tourists. In summer Dobbin had a fetching straw bonnet.

The lore of the animal-traction era abounds in doggerel. Following is an excerpt from "Local Men of Distinction," by George H. Gould, which appeared in a long-forgotten issue of *The Democrat and Leader*, Davenport, Iowa:

When Dad and Mother went to school
He drove a car pulled by a mule.

From Scientific American, October 25, 1870

ELEVATED STRUCTURE, recently torn down, at 110th Street and 8th Avenue in New York City

In those days cars were warmed with hay,
Upon the floor in heaps it lay.
You dug a hole, put in your feet,
And felt that you were warm complete.

Your nickel, too, you placed with care
In the little tin box labeled "Fare."
And street-cars always traveled slow—
A half a mile—an hour or so;
And when the car ran off the track
The crowd got off and put it back.

These lines were written about Mike Wenzel, a Davenport car driver of the old school. Another poem dealing with the same local celebrity, entitled "When Mike Wenzel Cracked His Whip," appeared in 1908. The first two stanzas ran as follows:

Two little mules in olden times
Pulled the cars on the street-car lines.
Folks now say they were too slow;
We didn't think so long ago.
They were always ready to make a trip
When Mike Wenzel cracked his whip.

We have the trolley and movie show;
We hadn't those things long ago.
We enjoyed a ride on the mule street-car;
A nickel would take us near or far.
The mules were there to make the trip
When Mike Wenzel cracked his whip.

GRAND-DAUGHTER of the illustrious Mike, Mrs. Edward T. Ballinger of Raton, N. M., sent us information about him. Davenport's first car line was operated over Third Street on March 2, 1869.

"When one stops to think of the hardships the people and the drivers on the early street-cars endured," Mike, who became a motorman, is quoted as having said in 1910, "he can scarcely realize that such a change has come over the street-car line. Extreme cold and discomfort, aided by rough travel and long delays, made street-car travel in the later seventies and eighties far different from what it is today.

"In the spring of '78 I joined the car service, at the age of 21, and have been on the car platform ever since. We had some hard times driving teams over the hard stony tracks in all sorts of weather, standing on the front platform with no protection. I worked on horse-cars for about thirteen years, until electrics replaced them.

"The horse-drawn vehicles were like light ships on the ocean. Only a dozen or so feet long, they rocked and bounced, sometimes jolting passengers overboard. When the snow was very deep, we ran wagon bobsleds. Fifteen hours a day was usual. We began at six a.m. and kept on the job until 9:45 p.m. We had several shifts of horses and mules, one team making one trip in an hour and a half and then resting three hours. Even at that, it was hard work for them. Many animals played out in a short time.

"Every driver was expected to look after the upkeep of his car. To see us washing the equipment after a muddy day was no unusual sight. Many a driver took as much pride in the appearance of his bobtail as an engineer did in his diamond-stacked locomotive.

"We thought nothing of taking several women downtown shopping, and waiting the car in front of a grocery or meat store while the housewives gave their orders before proceeding on the trip. We did have some sort of time schedule, but evidently no one expected us to live up to it. No driver would pass a prospective passenger on the street, but would stop anywhere for him and would even hold the car until he finished eating breakfast."

Photo by Lt. Com. E. J. Quinby, founder of Electric Railroaders' Ass'n

DOWN FLORIDA WAY, this handsome conveyance was the pride of the Key West Street-Car Ass'n from 1885 to 1898

Another Davenport man, O. A. Carstens, began his career by helping to lay track and later took charge of a horse-car over the same lines in Rock Island and Davenport. He witnessed a disastrous fire in '91 when the car barn was destroyed, together with many cars and horses. In bitterly cold winters, while he was driving a car, he was often forced to jump down from the platform and trot along beside the horses to keep warm.

"I developed some leg muscles before the end of those winters," he said with a grim smile.

IN ABOUT 1880 the Pullman Palace Car Company started building horse-drawn street-cars at their Detroit shops and later at the Pullman Car Works in Chicago. Probably the best known of these was the bobtailed *Little Jake* (see page 14). This was named for the celebrated traction financier, "Jake" Sharp, who ran the Third Avenue line in New York. Constructed at Detroit in 1880 for the Union Street Railway line of Saginaw, Mich., it was about twenty feet long from the dashboard at the rear end of the horse or mule to that of the rear platform. Four wheels, clustered beneath the center of the car, were sufficient. The driver stopped by yanking the reins with his left hand while he wound up the handbrake with his right.

"Well do I remember the bobtail mule-drawn cars of the early '80's," writes George Parke of Tampa, Fla. "I was living in New Orleans then and can never forget those old conveyances with their round front platform shields and their slot-operated fare boxes. When I first rode in one, at the age of six, I watched the driver and the passengers and the scenery, all at the same time."

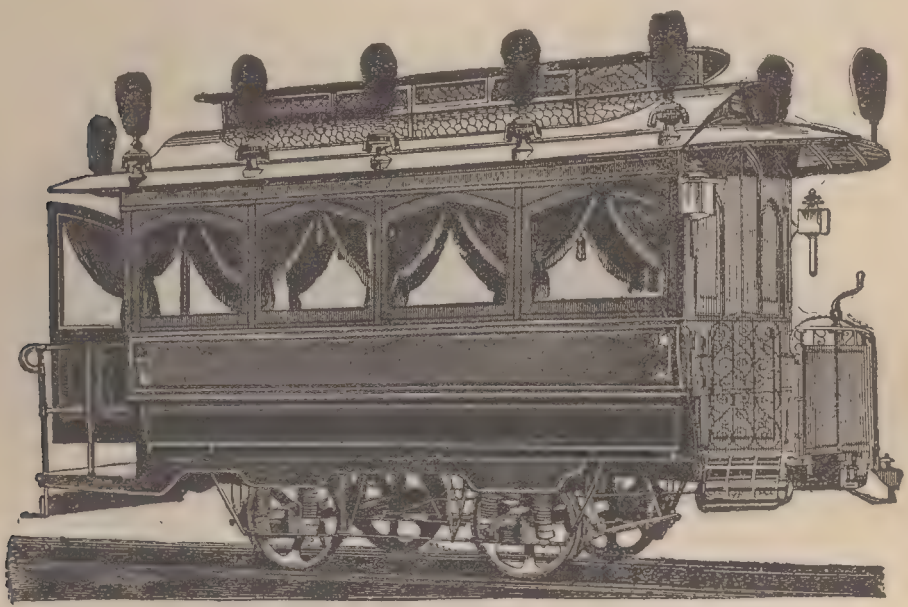
Even today, at 77, Mr. Parke blushes to recall that first ride in a bobtail.

"My mother was taking me downtown. We waited at a street corner until the driver halted his mule and the passengers entered from the rear. The step was high and narrow; I had to climb it on hands and knees. Just as I was getting aboard, a lady wearing a wide hoop skirt shoved in ahead of me. Following close behind, I arose in darkness—I was u n d e r the hoop skirt! Frantically I grabbed her leg (pardon, it was called a *limb* in those days) and I yelled, 'Mamma!' The lady screamed. Let us draw a veil over the subsequent proceedings."

Photo by O. H. Park, 467 Wood Ave., Weam, R. I.

SEA BREEZES wafted through this open horse-car, too. It was running on Block Island, famed Rhode Island resort spot of the early 1900

The driver was a busy man. Besides occasionally applying a whip to the mule, he would wind up the hand brake for car stops and, when releasing it, would dodge to avoid being brained as it flew around again. He had to rely on the honesty of the passengers, who put their fare in the front box slot, and he would pass change through a slide in the front door. He also had to look out for bad spots in the track which might derail

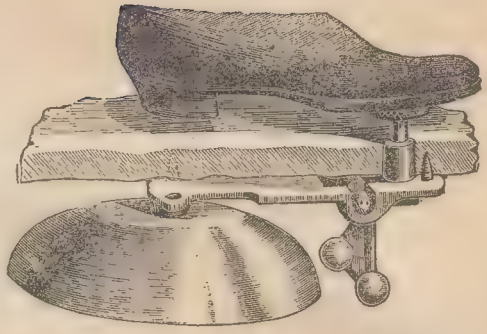


HORSE-DRAWN funeral car. Very few of these were built

the car and would glance now and then at the long line of passengers seated on either side, as well as those who clung precariously to leather straps hung from the roof.

The mule's pace averaged eight miles an hour—the present-day speed of New York's 42nd Street crosstown trolley cars. One New Orleans line used horses and had a wooden footway between rails, which somewhat increased the speed. The Girod & Poydras line was ribaldly termed the "Get Out and Push" road, from the notorious condition of the tracks. Another route, the Tchoupitouls, ran around the river side where cotton presses and coffee warehouses stood. Great three-mule "floats" of these industrial plants usually blocked the tracks and would not move until the irate car driver threatened violence.

The Crescent City later experimented with a system of steam traction on its Charles Avenue line. This apparatus was unique, to say the least. Several locomotives, without



"CLANG, clang, clang!" went the horse-car driver

fireboxes, were filled with hot water and superheated steam at a central powerhouse. One charge ran the engine and an ordinary car for 14 miles. The boiler was surrounded by a jacket containing a solution of soda acetate, which retains heat for hours. The little engines were attached at a halfway terminal and were guided from the car platform.

Another substitute for mule operation in New Orleans was the individually powered car with an engine attached to the front wheels and a

Photo from W. W. Silliman, Jr., editor, Pacific Electric Magazine

MEMORIES OF OLD LOS ANGELES. (Above) Retired horse-car rusts on storage track within view of modern car that supplanted it. (Page 31) City's last horse-car line served Redondo Railroad depot until 1901

boiler on the front platform. This also proved to be a flop. Finally the electric motor was tried, motivated by storage batteries. Mr. Parke once operated such a car, with unfortunate results. It seems the track was paved with Belgian cobble stones, one of which, standing higher than its fellows, came in contact with the driving gear and stripped it completely.

"There the car remained for hours," Mr. Parke concludes, "until it could be towed away."

IN LOS ANGELES the first horse-car began rolling July 1, 1874, along 1.38 miles of narrow-gage single track on Spring Street from Temple to Pearl. A sleekly curry-combed mare hauled a lone car. Another car was added December 1st. The fare was a dime, but the company sold five tokens for a quarter. Because of the scarcity of small change in the Far West seventy years ago, these tokens soon went into general circulation, being accepted at face value by businessmen all over the city. The service rendered by animal traction was noted in an old issue of *Two Bells,* house organ for the Los Angeles Railway (now Los Angeles Transit Lines), as follows:

"It was possible in those days for a lady not quite through with the then complicated business of dressing, to lean from her window—'Hoo! Hoo!' to the horse-car driver and signify her intention of catching the car within the next few minutes. Having acknowledged her signal, the driver would stop his horse and engage in conversation with his passengers until the lady appeared, at which time the car would proceed."

A trainload of mules was bought for use on Los Angeles street-cars. Having been raised on the staked plains of Texas, they did not take kindly to city thoroughfares. These animals were the cause of establishing the company's first claims department. At the northern terminus —then Pasadena Avenue and Avenue 33—the drivers had to change the mules from one end of the car

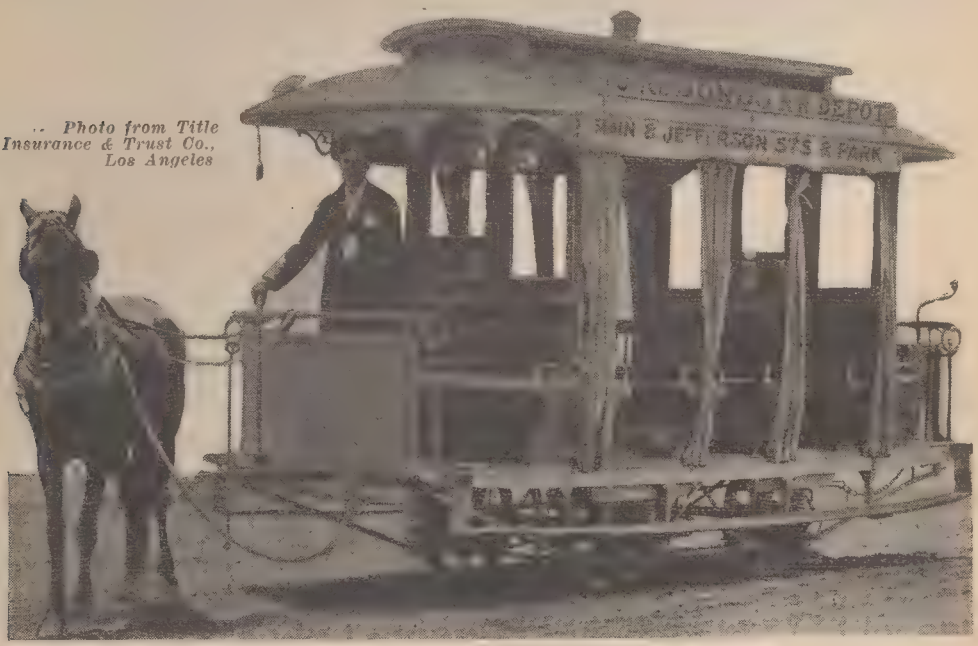


Photo from Title Insurance & Trust Co., Los Angeles

Photo from Pfc. Vitaly V. Uzoff, 611 W. 141st St., New York City

EVEN IN HAWAII a horse-car cavorted over city streets. This outfit was owned and operated by a British concern. Later the Honolulu Rapid Transit took over

to the other, and sometimes the mules had notions of their own. Residents of that locality bought numerous claims against the company for broken fences and ruined gardens.

Now and then the mules made an entire get-a-way, and it took from two to five days to round them up again. Ordinarily they jogged along at snail's pace in going from the car barn to the other end of the system, but when they were on their way back to the stable where they were fed, they trotted well ahead of schedule. Sometimes, at a siding, when a team going from the barn met a team returning, the former would break away and follow the other team back.

Los Angles turned to cable cars in 1885, and electric equipment in 1887, and the mule-cars lost out.

UP IN PORTLAND, ORE., where he now lives as a retired boomer, Charley Roach harks back to an autumn day in 1887 when, as a long-legged kid of fifteen, he drove a mule-car—only once. The scene was Louisville, Ky. Charley's father worked as section foreman on the street-car system there and the boy slaved for him as waterboy at fifty cents a day.

"The job ended," Mr. Roach tells us, "five minutes after Dad learned that his big boss, Superintendent Kimball, could use me as a mule driver. Being young and ambitious, I jumped at the chance to do something really important.

"Sure, I could handle long-eared motive power, but I didn't care much for it. One of the stubborn critters had kicked me some years before, so I took the new job with my fingers crossed. Dad put up five dollars as security for a bag of nickels such as each driver started out with.

"On the eventful morning I washed my face, slicked back my hair, and showed up at the car barn to drive a

little, dumpy, four-wheeled conveyance. You had to stop at every street crossing where a passenger wanted to get on or off. This called for skill in setting brakes. You were supposed to brake the car without upsetting the riders or jerking the mule back on his haunches."

The matter was made clear by the car-barn instructor, a fussy old gent, who also advised Charley to protect his coin pouch.

"Now, young feller," said the instructor, "there's been a few hold-up men workin' this line in the early mornin' a-robbin' the drivers. So you take this gun." He slipped a bright shiny pistol into Charlie's hand, much to the boy's surprise. "If you

Photo from Al Comstock

"BELT LINE TO ALL FERRIES." New York bobtailed car, enroute between Central Park and South Ferry, on the southern tip of Manhattan Island, passes the old Mission of Our Lady of the Rosary

LOWER CANADA'S first horse-car made its appearance in Montreal in 1861. This service lasted until 1892, when it was displaced by an electric tram

see any mean-lookin' men—there's usually two of 'em operatin' t'gether—just fire a shot and yell for the police."

Charley thanked him for the advice and drove out of the barn. It was a fine October day just before sunup, about six a.m. The lad clutched his reins tightly, feeling very important in the new job but a bit worried about meeting robbers. We'll let Charley tell the rest in his own words:

"My mind was so confused that I passed a coupla men who yelled for me to stop so they could get aboard. Then I stopped suddenly. This caused the unsuspecting mule to sit down in the street. Getting out of the car, I coaxed the motive power to his feet; and by that time my first two passengers overtook me, scrambled into the car and dropped their fares in the box.

"After a while I had quite a few passengers. Everything was hunky-dory until I neared the end of the line. Then the Toonerville started to roll down grade. I set the brake firmily and the poor mule sat down again. Once more I persuaded him to continue the journey.

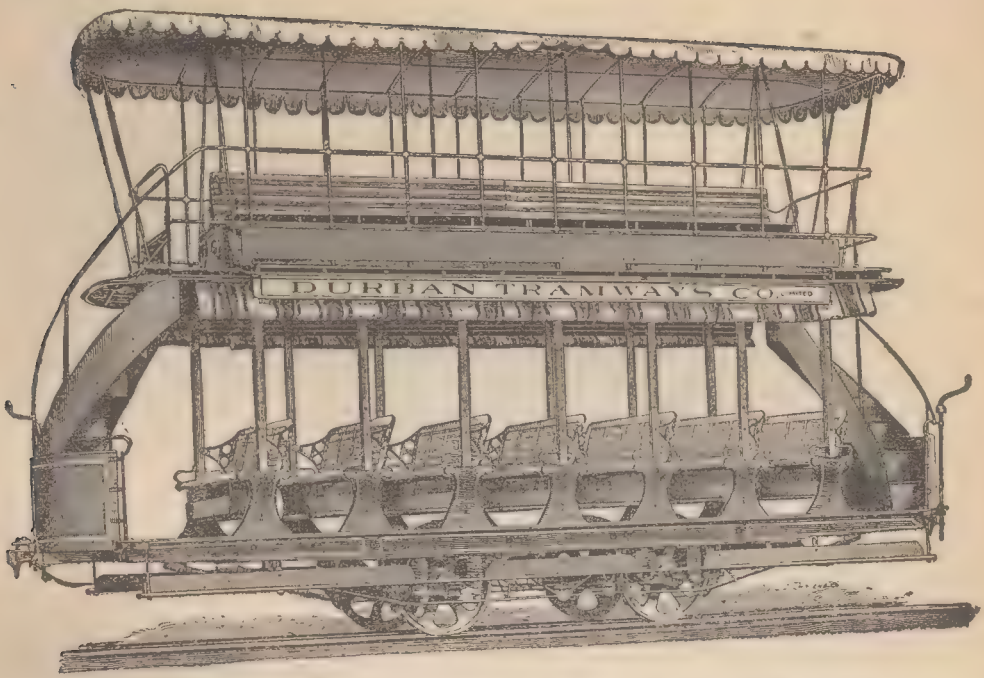
"My route was four or five miles long, extending over Ninth Street to the southern outskirts of Louisville. The right-of-way was reasonably level, except near the suburban terminus, where it took a steep drop. Well, were jogging along all right down the hill; but the track was rough and the joints were low, and the four wheels of my car were placed near the center, so the darned thing soon began to bob up and down. The mule did some fancy running to keep his rear end from being bumped. I set the brakes in the hope of simplifying his problem.

"At that juncture a lady passenger told me to stop the car. We were traveling so rapidly I couldn't stop. Then she screamed hysterically and the mule ran faster than ever. Just as the bouncing vehicle reached about halfway down the slope I leaned back too far on the reins. My hip pocket came in contact with some small iron rods that were supposed to protect the car window. The trigger of my pistol, which I had shoved into my hip pocket, caught on one of these rods. There was a deafening noise and a bullet zipped through my pants—without hurting me, I learned later.

"This crazy explosion reminded me of bandits. In a blind impulse I jumped off, determined to escape with the money even though they might take the car and the mule. I sprawled over the ground, picked myself up, and ran for all I was worth."

That was Charley Roach's first and last experience in driving a mule-car.

"I disgraced myself so thorough-



THE ONLY DOUBLE-DECKER horse-car we know of was this topheavy creation, built presumably for the Canadian town of Durban, Manitoba. We'd hate to be riding in the balcony if the team decided to gallop on a downgrade curve

ly," he adds, "that I did not walk to the end of the line, where the car finally stopped, and I did not dare to show up at the barn. In fact, I was even afraid to go home, until hunger forced me to face the music. I will skip over the painful details, except to say that I went back to the job of waterboy at fifty cents a day. I'll bet that mule had a good laugh when he saw me toting water again for the track gang."

ANOTHER ex-boomer, Lad G. Arend of Franklin, O., reminisces over a horse-car job he once had.

"When I was a young fellow," Arend tells us, "I lived in Sedamsville, a suburb of Cincinnati. Leading up out of town was a long hill over which a car line operated. At that point a hill horse, as it was called, was stationed to give helper service to the hard-pressed team. I often had charge of that horse. Many a day I hooked onto a car at the foot of the hill, rode the nag to the top, unhooked, rode her downhill, and waited for the next vehicle to come rumbling along.

"Sedamsville boasted a pleasure park. Whenever a picnic was held there the rattletrap cars were packed to utmost capacity. It took all the strength of three plugs to drag that load up the slope. We used to carry a derailer. When the car we were driving was too late to proceed to the end of the line, we would put the derailer under the wheels, pull onto the opposite track, transfer the horses to the other end of the car, and thus make the short cut."

Another form of saving time was reported as follows in the Joliet, Ill., *Herald-News:* "Many a night the owl

CANADIAN HORSE-CAR EQUIPMENT included these two specimens. Above we see a vehicle serving North Toronto and Union Station, with J. Gibbons, conductor, and J. Badgerow, driver. Below: Sled used by Montreal Tramways Company in the winter months from 1861 to 1892. Four horses pulled this conveyance. In 1891 a full dozen steeds were needed to haul Montreal's first snow-sweeping vehicle

car, the last one from North Collins Street, would take a short cut by derailing at Cass Street and Eastern Avenue and going south on a trackless thoroughfare to Jefferson Street, where it would again proceed on the rails to the car barn at Second and Wilson avenues."

TURNING NOW to Canada, we find that Toronto horse-car operation began in 1861 with the formation of the Toronto Street Railway Company. Cars had wooden bodies sixteen feet long with open platforms front and rear, and drop windows for ventilation. During the winter there was no heating provision except pea straw scattered on the floor. The driver, exposed to the elements, had a box of such straw in which to place his feet.

In case of fire it was quite usual for cars to be pulled from the tracks to make way for fire apparatus, and when snowstorms halted car service the company hauled the public in sleighs. Not until 1891 did a snow sweeper appear on the streets of Montreal. This was a behemoth drawn by a dozen horses. Its

debut created a nine-day sensation.

By the end of 1861 the company owned six miles of track, 11 cars, 70 horses, several sleighs and wagons, and carried about 2000 passengers daily. Thirty years later the line had 68 miles of track, 262 cars, 99 omnibuses, 100 sleighs, 1372 horses, and was carrying 55,000 passengers daily. First electric car ran on the line in 1892 and on August 31, 1894, the last horse-car (on McCaul Street) was withdrawn from service.

Trucks were taken off some horse-cars in winter and car bodies were mounted on runners to glide over the snow.

After the introduction of horse-cars in Toronto on September 11, 1861 the omnibus services put up a brave but futile struggle for existence. The running gear of the buses was altered to fit the horse-car rails and the competition they were thus able to provide made it advisable for the street railway to buy them out in 1862.

On some of the early cars the fare box was hung inside the front door, and as passengers could enter by either front or rear door it frequently depended on the individual's integrity as to whether or not he paid his fare. In this period neither drivers nor conductors wore uniforms.

Opposition to electrification was offered by horse fanciers and a few who "viewed with alarm" the debacle that would be caused by electric cars rushing madly along crowded thoroughfares. Some of Toronto's first electric cars were converted horse-cars of both open and closed body type. Stoves were not placed in Toronto cars until the rather severe winter of 1891-'92. Even then they were regarded as a fire hazard and were watched with caution by drivers and passengers alike; but they did supply much-needed warmth.

Montreal's horse-car venture began the same year as Toronto's, in 1861, when the Montreal City Passenger Railway was incorporated. Both cities tried out electric traction in 1892. During that interval Montreal's trackage grew from six miles to thirteen as the city's population increased in about the same ratio.

Other Canadian cities and towns

1871 **TIME TABLE** 1871

Third Ave. R. R. Drawing Room Car.

DOWN.				STREETS.	UP.			
A.M.	A.M.	P.M.	P.M.	HARLEM BRIDGE.	A.M.	P.M.	P.M.	P.M.
7.30	10.30	1.30	4.30	Leave. 130th. Arrive.	10.15	1.15	4.15	7.15
7.52	10.52	1.52	4.52	" ..... 86th .. Leave.	9.55	12.55	3.55	6.55
8.02	11.02	2.02	5.02	" ..... 65th ..... "	9.45	12.45	3.45	6.45
8.18	11.18	2.18	5.18	" ..... 42d ..... "	9.34	12.34	3.34	6.34
8.17	11.17	2.17	5.17	" ..... 34th ..... "	9.30	12.30	3.30	6.30
8.28	11.28	2.28	5.28	" ..... 23d ..... "	9.25	12.25	3.25	6.25
8.27	11.27	2.27	5.27	" .... 14th ..... "	9.20	12.20	3.20	6.20
8.32	11.32	2.32	5.32	" ..... 5th ..... "	9.15	12.15	3.15	6.15
8.37	11.37	2.37	5.37	" .... Grand .... "	9.08	12.08	3.08	6.08
8.52	11.52	2.52	5.52	Arr. City Hall. Lve.	8.55	11.55	2.55	5.55

THIS CAR WILL NOT RUN ON SUNDAYS.

This Car is run only for such Passengers as Voluntarily pay the Conductor **10 CENTS** *for their seat in addition to the fare.*

Timetable and the ticket on page 4 from Melville Langhans collection

EVEN HORSE-CARS ran on schedule, especially the extra-fare contraption of the Third Avenue Railroad, New York. The drawing room car, a four-wheeler built by Pullman Palace Car Company, was a veritable plutocrats' special, boasting softly cushioned seats and luxurious drapery. Interior and exterior views of it appeared in the November '45 ***Railroad Magazine***

Photo from collection of Melville Langhans, New York City

BEFORE PENN STATION WAS BUILT, most visitors to Manhattan Island arrived by ferry, including the slip at the foot of Desbrosses Street, pictured here

which used horse-cars included Halifax, St. John, Quebec, Ottawa, Hamilton, St. Catherines, Niagara Falls, Brantford (now Kitchener), London, St. Thomas, Sarnia and Winnipeg, we learn from Robert R. Brown of Point Claire, Que.

"Canada's severe climate," he says, "made horse-cars hard to operate, and as soon as successful electric cars came on the scene the Dominion's horse-car lines were rapidly converted. Most of Canada's horse cars were built by John Stephenson of New York.*

MONTREAL had quite a variety of horse-drawn equipment. There were undersized closed cars with boxes 15 feet long for hilly routes, larger ones with boxes about 20 feet long for level grades, and a few big double-deckers with seats arranged back to back along the center of the roof. As the wide railings were very low and the space limited, stumbling over the feet of fellow passengers must have been a dangerous pastime. Open cars were of various sizes—five, six or seven benches—with the small ones used for hill climbing and the bigger ones elsewhere.

On St. Lawrence and Denis streets there were sharp inclines extending for a block or so, and extra horses had to be stationed at those points for the same reason that helper engines are used on steep hills of steam railroads.

The hill-climbers were two-horse teams, each hitched to a small two-wheeled cart for the driver. To the back of this cart was attached a length of chain, with a hook on the end. The cart would be waiting on the track at the foot of the hill. When a car approached, the driver of the "booster" would attach the chain and hook to the front of the car, and the four horses would drag the vehicle to the top of the grade. When the cars were very crowded, the able-bodied male passengers had to get out and walk and, in rare cases, lend a hand to the struggling steeds.

In Canadian winters, when streets were piled high with snow, it was, of course, impossible to operate horse-cars. Sleighs were used. One type was a horse-car with wheels removed and runners attached, but these were rare. The commonest type were closed boxes mounted on large bob-sleighs. They were easier to haul than the summer cars and consequently were speedier.

"On mild, sunny, winter days," comments Mr. Brown, "they must have been pleasant to ride in, but when the mercury fell to 20 below or worse they must have been miserable. You can well imagine the shivering passengers burying their feet in the deep layers of pea straw that covered the floor and praying for an early spring."

The third type of sleigh was similar but had no driver's platform in front. The "engineer" stood inside in comparative comfort, the reins passing through two small apertures in the front bulkhead.

Most of the sleighs were operated by one-man crews. A metal fare-box was attached inside the rear door.

*Illustrated article on *John Stephenson, Master Car-Builder*, appeared in our Sept. '45 issue.

From John H. Powers, Pittsburgh, Pa.

NOT a superstition in a carload. Everybody seemed happy. The sardine can was No. 13 of Citizens Passenger Railway, and the year was 1859, when Pittsburgh adopted horse-cars

The driver would peer through a tiny hole bored in the bulkhead behind him to watch you deposit five cents. If you forgot or tried to slip by, he would ring a bell to jog your memory. Only the most thick-skinned individual could endure without blushing the ordeal of meeting the eyes of fellow riders when the merry little bell tinkled.

In the spring, when snow and ice rutted the streets and bare patches of road appeared, the sleighs were put back into storage, and high-wheeled omnibuses would carry passengers for several weeks, until milder weather cleared the rails for horse-cars. Along some routes where traffic was too light to warrant the expense of laying rails, buses were used all summer long.

On hot summer evenings horse-car rides were very popular. Old-timers will tell you how much they enjoyed this kind of travel. However, in late fall, winter, and early spring the annoyances were so obvious that riders were glad to welcome the cozy, speedy and reliable electric cars.

Electrics began running in Windsor in 1886 and in St. Catherines a year later. By 1895 only three horse-car lines remained in Canada; even these were electrified the same year or shortly afterward.

NO NEED to back Dobbin into this Fort Hamilton 18-seater. George Stephenson slipped a steam engine under her deck

Pittsburgh Rys. photo from D. E. Shaw, 94 Federal St., Springfield, Mass.

SARAH AND SALLY, mules named from the Sarah Street line on which they plodded their weary way, hauled the last animal-drawn car in Pittsburgh, Pa. When this service was abandoned in 1923, the only such car still operating in America (so far as we know) was in Sulphur Rock, Ark.; and that one passed out three years later

ONE BRANCH of a horse-car line was built to a Civil War recruiting and training camp. That was in Milwaukee, where the River & Lake Shore Railway Company had inaugurated street-car service May 30, 1860, for the city's population of 45,000.

The company's first two horse-cars were built in Philadelphia. On the second Sunday of their operation the two vehicles carried a total of 3362 riders.

It was in the gloomy summer of '61 that the branch was built to the Army post. The Milwaukee Street Railway Company, into which the R&LS was absorbed, gave the city its first "juice" cars in April, 1890—a move which showed the horse-car that its days were numbered.

Swinging eastward to Paterson, N. J., famed as a locomotive-building center and sometimes called "The City of Iron Horses," we find that December 14, 1891, was a sad day for the horse-car adherents and a gala occasion for the rest of the city. We read in a yellowed copy of the *Paterson Daily Guardian:*

"Announcement that an electric car was on its way down Main Street spread like wildfire. Heads popped out of every window along the route, and the sidewalks were lined with people, many of whom cheered, waved handkerchiefs and in other ways gave expression to their approval of the new system. A rumbling sound and a clang of bells gave warning. In a jiffy the car swept past, and the contrast to the slow-moving horses was striking. It is quite evident there will be a lot of excitement

Photo by Melville Langhans

UNIQUE TOMBSTONE in Greenwood Cemetery, Brooklyn, N. Y., shows a man saying goodbye to his wife (the last time he saw her alive) on his way to board the horse-car shown by arrow

before Paterson horses become convinced that the cars are perfectly harmless."

Within a year equine power had all but vanished from the Paterson Railway's 16 miles of track. Just a few plodding steeds were left of the 180 which the company had employed in the halcyon era when you could count horse-cars on the principal streets at the rate of six every ten minutes and when no cars, except "theater specials," ran after 10 p.m.

In Baltimore, Md., horse-cars replaced the omnibuses that rattled over cobblestoned streets July 26, 1859, and in turn were outmoded August 10, 1885, by what the Baltimore Transit Company claims as "the first commercially operated electric street-cars in America," which continued in service for more than a year. Baltimore's first overhead trolley line was instituted August 16, 1890, and the city's first cable line began May 23, 1891. In the face of all these developments poor old Dobbin faded into obscurity.

NEW YORK'S final horse-car line, which outlasted most of the others, ran on Bleecker Street until July 26, 1917. Your author remembers it very well. As a boy visiting New York from Philadelphia, one of his chief delights was to ride in the outmoded vehicle, the like of which had already vanished from his native city.

For its last year of operation the traction company averaged only about thirty cents a day in fares. Running the hay-burners cost them $1.50 for each nickel collected. This did not seem to be very profitable. We do not wonder that the brass hats eventually decided to give the nags a six-months furlough twice a year.

Tom Mortimer, who had piloted horse-cars in the sun and storms of four decades, put on a clean collar. His antique conveyance was dusted and scrubbed with unusual care. Even the window-panes were washed. Then his two veteran steeds were groomed for the Roman holiday.

After Public Service commissioners had driven the bumping, rattling,

squeaking vehicle down Bleecker Street and through the Greenwich Village section, Tom firmly grasped the reins. It was his last horse-car ride. There must have been a pang in his heart when he finally drew up with a flourish inside the gloomy barn at 9th Avenue and 14th Street.

The operation of animal-drawn street-cars came to an inglorious close at Pittsburgh, Pa., on August 23, 1923, when a drab conveyance drawn by a mule team made its final journey to the barn, never again to emerge as part of a public franchise.

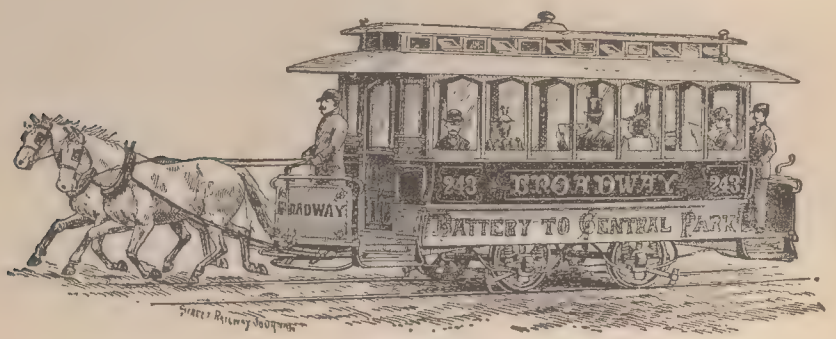
This trip marked the end of a form of transportation which the Citizens Passenger Railway Company had launched in the Smoky City sixty-four years before, almost to the very day. But it did not ring down the curtain on an era. That dubious honor, so far as we could discover, fell to the one-mule car that covered a mile route between the Missouri Pacific Railroad depot and the town of Sulphur Rock, Ark. This service began in 1884 and continued without interruption until 1926. In its final year the line grossed $666.22. We believe it was the last animal-powered street-car in regular service in North America.

Since then, on rare occasions a horse-car has clattered over some city street in a "Gay Nineties" fete or perhaps to advertise a department store's anniversary. And during the New York World's Fair of 1939-'40 visitors to the "Little Old New York" concession could ride a horse-car that featured the exhibit—until the bored motive power, doubtless rebelling at the anachronism, ran wild and killed a man. After that the amusement short line was taboo.

These few exceptions are merely relics from the past, the display of museum pieces to a generation that regards them as only casually entertaining.

Here and there you find a veteran of horse-car days still in active service. For instance, Albert E. Jones of Cincinnati. Al was fifteen in 1890 when he began work as mealtime relief conductor on horse-cars. Since then he has also handled cable cars, open and closed equipment, and motor cars and trailers as trains; and now, still with the Cincinnati Street Railway, he is running as an operator on sleek PCCs.

Basking in the memories of more than 55 years' service, Jones proudly tops the Walnut Hills Division seniority list. He has come a long way from horse-cars to streamliners.



Blue Chip Run

THE TICKING of the standard clock seemed to grow louder, as John Ryerson stood facing the Superintendent of motive power in the latter's office at Toronto Union Terminals. The engineer's weather-beaten face looked haggard. His squared jaw and the angry flash of his steel-blue eyes were poor attempts at concealing his uneasiness.

"So you think, Mr. Cameron," he said, "that it wasn't necessary to

By WILLIAM J. PARRY

Engineer John Ryerson Had One Chance to Retrieve His Service Record of Twenty Years

wire for another engine. That since I didn't bring in my train with a disabled engine, I should be barred from main line service?"

The Super's eyes grew frosty. Picking up a letter from his desk, he handed it to the engineer without comment. The General Manager's correspondence left no doubt in either mind what he meant to have done. "Unless immediate investigation is held to fix the responsibility for the delay to No. 15," it read, "disciplinary action will follow. J.C.D."

"You see how it stands," replied Cameron. "Unless you can give me a satisfactory explanation, I have no alternative but to pull you off first class runs."

The engineer sat stiffly in his chair, his eyes focused straight ahead. He seemed waiting for the axe to fall.

"Speak up, Ryerson!" snapped the Super. "Let's have your excuse?"

For an instant, the runner's eyes met the official's but they dropped immediately. He opened his lips to speak, but no sound escaped them. His throat was dry and his tongue seemed stuck to the roof of his mouth.

"Ryerson," Cameron resumed after a long pause, "I'm giving you a last chance to explain why you gave up your engine, delaying Number 15 for more than two hours. According to the road foreman of engines"—he waved his hand toward the man sitting beside him—"you could have made repairs and brought your train in with a delay of only forty minutes."

There was great tension in the office as the brass hat spoke, but still his words had no effect as far as bringing a reply. John Ryerson remained speechless. He would have liked to mention his forty years' experience without one engine failure of that nature, but that was a weak alibi. He couldn't really figure it out himself. His judgment had never been wrong before. The Superintendent understood his decision, for with a look of disgust, he turned back to the reports on his desk.

"All right, Ryerson," he said, "you may have your reasons for refusing to talk, but when an engineer is incapable of making temporary repairs to his engine and causes a serious delay to an important train, to say nothing of the criticism from the transportation department, it's time to assign him to less important runs. Considering your good record, I'm prepared to deal generously with you. I'm not taking you out of main line service, instead I'll give you a chance to bid in the ore drags on the Montreal District."

Superintendent Cameron, looking up suddenly from his papers, caught the agony in the eyes of the veteran, a look of hopeless resignation. When he spoke again, it was slowly, spacing the words out, so that you remembered them for a long time.

"If I were you, Ryerson, I'd take the ore runs. The company has a contract with the aluminum plant in Quebec to deliver ore to the mills, which used to come by freighters. We're short of experienced engine and train crews at Montreal, and it's a chance for you to make good. That's all!"

The official court rose as one man, scraping back their chairs, relieved that the investigation was over. Engineer Ryerson rose unsteadily to his feet, and walked out alone. He wanted to escape as fast as he could, now that it was over. It had been hard to sit there and have a lifetime of work and planning blown to bits. The worst part was not being able to say a word in his own defense. But thank God, the investigation was over, even though it meant his world had crashed. He had fought his way up from call-boy to Number 15—the best run—and now he'd lost it.

A calloused hand fell gently upon Ryerson's shoulder. The engineer turned to look into the grave, patient eyes of the tall, broad, Irish-Canadian road foreman of engines, Mike Brannagan.

"I'm sorry, Johnny," Mike began, "sorry as hell, but I had to protect my job. I had to tell Cameron why we had to send for another engine. And the GM is sure burning us over the delay to his pet train."

THE TWO faced each other. Seeing the hurt expression in the runner's eyes, Mike kept on a conversation far from what he had had in mind.

"Johnny, you shouldn't have overlooked the importance of stopping your train with the slack in, once you were aware something had gone wrong with the valve motion. It was the nut working off the inside radius bar bolt, allowing the bolt to back out, foul the horizontal arm of the bell crank and prevent the reversing gear from going into back motion, that caused all the trouble."

Mike got no rise out of Johnny. The pair stood silent then for a moment, each with his own thoughts, while the fast-gathering dusk dropped a curtain over the office windows. The road foreman studied the engineer's features, apparently fascinated by the power of the man, and the suggestion of tragedy about his stooped shoulders.

Then Johnny turned to Mike as if to speak, but checked himself, as the foreman spread out the thick fingers of his hands in an expressive gesture.

"You see how it is. By stopping with the slack in, you could have cut the engine off from the train, placed her on the bottom forward eighth, put the reverse wheel at fifty per cent forward gear, straightened the bent pin with a pipe wrench and driven it out over the top of the bell crank. The engine would be lame on that side, but you could have brought the train in with only a slight delay. I did the best I could for you, but Cameron had two strikes on you before you were called into his office—"

Engineer Ryerson made no reply, staring out of the windows with sombre eyes. The road foreman pushed back his oil-stained felt hat to scratch his head, and then crossed the corridor to the windows. Silently they stood, their eyes following the movements of the hostler who was lining up five Santa Fe freight engines on the eastbound outgoing track. The five big locomotives were under steam, ordered light for Montreal.

"What a picture they make, modern Juggernauts at rest," murmured the road foreman, musing aloud. "Those five engines are the only big power I can beg, borrow or steal, for the toughest assignment ever wished upon me, and I'm expected to perform miracles with 'em. Besides, I'm expected to dig up thirty experienced crews and assign them temporarily to the Quebec District to handle the ore drags."

Selecting two cigars from the vest pocket of his blue serge suit, Mike lit one and handed the other to Johnny. The engineer accepted the proffered smoke gratefully, then fixed his eyes on Brannagan's face. The foreman met his gaze, and for a moment threw all the weight of thirty years' experience of men into the scales of judgment.

"What d'ye say, Johnny, can I count on you? You've worked out of Montreal and know the 300 miles of cowpath the road department is ballasting so that I can roll the ore drags over it."

Engineer Ryerson studied the cigar band stoically without resentment. He had failed as a passenger engineer and a younger man would be raised up in his place.

"Okay, Mike, you can put me on your list. I'll take the ore drags," he said in a strained voice.

The road foreman's grave, patient eyes lit up with a smile. Impulsively, he slapped the engineer's shoulders.

"I knew I could count on you, Johnny. You'll be in good company. My men are coming from the prairies, hard-bitten railroaders used to the deep-snow country, that can take it in weather down to sixty below."

The engineer's half-smile was a little grim as the two men entered the elevator and descended to track level. With a parting wave of his hand, and his homely face breaking into a smile, Brannagan crossed the tracks to the roundhouse, leaving the engineer alone with his thoughts. Mechanically, Johnny wandered in the direction of his house that had once been home, apparently glancing at the faces of passing pedestrians, but in reality seeing and hearing nothing, realizing only the grim satisfaction that his wife was no longer living to share his disgrace. She had died a year previously. Now he had neither chick nor child to hold him in Toronto. He would sell the old home and leave for Montreal to start anew. The change over from a crack passenger run to hauling ore was not going to be easy, he reflected bitterly, but it was the only solution to his problem. A week later, with all his earthly belongings stuffed into a grip, he deadheaded to Montreal on Number 14.

RAIN was falling in a steady, chill drizzle from a leaden sky when he arrived at the Turcot roundhouse at 6 p.m. to find Mike Brannagan seated in the locomotive foreman's office, worry creasing his forehead.

"Looks as if I'm stymied, Johnny," the road foreman said, as the engineer handed his papers to the chief clerk. "I haven't an engine crew available for the night run, and the aluminum mills have only one day's supply of ore on hand. That means drawn fires in the pot rooms—with days, or weeks perhaps, before the mills can get going again. It could even mean loss of our contact."

The office door burst open suddenly and the stout roundhouse foreman barged in to report to Brannagan.

"The 4103 is ready," he announced. "The dispatcher wants an order on her as soon as we have an engine crew with their rest up." Gripping a piece of chalk between thumb and forefinger, the foreman began writing.

Mike Brannagan, eyebrows drawn into a deep frown, watched the foreman make up the crew board. The men were booking from eight to twelve hours rest, and the first crew would not be available for six hours. On the face of it, it appeared that Brannagan was already licked.

It was quiet there, so quiet the sharp clatter of the typewriters in the outer office was heard distinctly. Tossing his cigar butt into the spittoon, Brannagan turned appealing to Engineer Ryerson.

"Would you accept a call for the night run, Johnny, if I get Dayton to fire for you? Tommy is the best of the stoker firemen, he's a classed man and knows the road. What d'ye say, John?"

Engineer Ryerson laughed without humor. "You win, Mike. I'll take the call, but I haven't been over the cowpath for years, and I need all the help you can give me."

"That's a deal," replied the foreman. "You slide over to the restaurant and put on the feed bag. I'll get the engine ready, as soon as I call Dayton." He grabbed the telephone and dialed the fireman's number.

Two hours later, the 4103—titan of the rails—backed down upon her train of sixty hoppers, each loaded to capacity with fifty-two tons of bauxite ore, basic ingredient for aluminum. Mike Brannagan's glib tongue had worked magic on Dayton, so the fireman had consented to forego his rest to fire Johnny's drag.

"Big Jack" Peterson, conductor assigned to the run, was a giant of a man, hailing from Edmonton in western Canada. Big Jack had spent years railroading through the Canadian Rockies. He called attention to the various meet orders as he handed the flimsies to the fireman, while the engineer was testing his brakes.

William J. Parry, Canadian National engineer

Head brakeman Joe Toulouse came to stand beside the fireman and listened attentively as Tommy read each order, checked with the clearance, and then turned them over to the engineer. Finally, he came to the order limiting the speed of Santa Fe engines to twenty miles an hour between Turcot and Souilliere. Engineer Ryerson loosed a low whistle.

"What's the idea holding these engines down to that low speed? Don't they want to get this stuff over the road?"

The stocky French-Canadian brakeman shrugged his wide shoulders.

"By gar! You do not know? You soon find out. This engine she ees too beeg. The track she ees too light, so we go slow to Souil-li-ere!"

Big Jack, chuckling inwardly, headed back to the caboose. He always got a kick out of his French-Canadian brakeman. And Mike Brannagan knew his stuff when he picked the native sons of Quebec for tail-end crews. They knew the road as they knew the palms of their hands, and could railroad with the best.

While he strode along towards the tail-end, Big Jack's alert eyes watched the movements of the oilers and car tonks, as they worked on the ore loaded hoppers. Handling a high priority train over a single track road, originally built for hauling logs to the sawmills of Quebec, and now threatening to bog down under the strain of the heavy ore trains, was no job for sloppy railroaders. The genial conductor was aware of his responsibilities.

On reaching the caboose, the conductor checked the air gage, then his lantern twirled the high sign. Two short blasts burst from the whistle's throat. The next moment, the engineer shoved the reverse lever into forward gear, raised the booster engine latch and opened the throttle.

FIVE PAIRS of driving wheels, turning in unison and assisted by the booster, took up the slack. The exhaust boomed from the squat stack and rumbled over the yards. The stoker elevators began turning slowly with a clickety clack, spreading crushed coal over the blazing maw of the huge firebox, as the ore drag began threading her way through the spider web of tracks towards the main line and the aluminum plants, far to the north-east.

Clearing the yards, the runner eased his big Santa Fe engine along at the twenty-mile an hour pace allowed by the speed restricting order. The chilling rain had turned to sleet. Unforewarned, the ore drag headed out into one of the worst storms in Quebec's history. Lashed by a pelting rain, the headlight threw a broken beam ahead on the twin steel lanes.

While flanges groaned and squealed beneath the heavily laden gons, the engine rode on over light

rails which threatened to buckle under the load. Being in a spot like that makes some engineers quiet, others jumpy. Veterans like Ryerson wrinkle their foreheads so you figure maybe they're thinking. Johnny Ryerson was thinking—but not of derailments. He had reduced to the speed limit, and whether his engine remained on the rails or took to the fields was in the lap of the gods.

Johnny was pondering on how cruel fate could be to a man. You love a woman and she dies. You become attached to an engine and you lose her. You might as well not bother trying to be happy. It just didn't work. Johnny's tired eyes followed the headlight's flickering beam as it picked up a station mile board. The ore train was rolling into Souilliere, so he pulled his wandering thoughts back to the job in hand. Fifty of the long, weary miles were behind him.

At the water tank, the engineer spotted the Santa Fe's big Vanderbilt for a long drink. Slipping into his mackinaw, the brakeman clambered down the gangway ladder to inspect the head end of the drag, while the shivering fireman climbed the tank ladder and shoved the spout into the manhole. That done, he came back into the cab to shake down the fire.

Long before the engine crew had completed their chores, the pilot engine had coupled on ahead, ready to assist the drag over the stiff grades which lay ahead. The confusion and shouting above the drone of the pop valves died down. Then from somewhere back in the gloom, a lantern rose and fell; the pilot engineer whistled off, and two powerful locomotives began lifting the heavy train. As it cleared the yards and set out into the open country, sleet pounded down against the cab roofs, stinging the face of the engineers as they peered through the open side windows.

Johnny Ryerson dragged air deep into his lungs. Shaking the sleet from his goggles, he took a fresh grip on the throttle. Black clouds belched down from the smoke stacks, were caught and carried far back by the wind. The deep-toned bark of the exhaust jarred their ear drums; but the double-headed drag—engines working to full capacity—forged steadily ahead.

Mile after mile clicked beneath the rolling wheels while the storm increased in fury. Roaring down from the Gulf of St. Lawrence, the high winds slashed at the driving wheels, as the laboring engines battled their way up the steep grade.

Tommy Dayton, his young face taut, watched steam and water gages like a hawk. The feed water pump and stoker were running wide open, with the iron fireman barely holding the steam pressure in this unrelenting battle with the elements. A milepost loomed up and by. The engineer moved the booster idling valve into position, warming the cylinders. Instantly, Tommy was off his seatbox, anticipating Johnny's next move. Slamming open the dust doors of the vestibule, he reached for the scoop.

As the engineer raised the latch, the powerful engine shuddered as the booster caught the rail, adding its power to the driving force. The steam gage pointer wobbled uncertainly for a moment, then began slowly to drop. Now that the engine and booster cylinders were calling more steam, and wet coal began clogging the stoker elevators, Tommy was busier than a one-armed switch

tender in a joint terminal. At times the speed dropped to a crawl, and it seemed that despite all his efforts the ore drag would stall. But the iron hearts of the locomotives hung on, fighting their way up the long grade to Bordeaux. Topping the hill, the doubleheader rolled into the station and stopped at the order board.

The toughest miles lay ahead. Orders were to reduce tonnage and wait for a light engine, sent to assist the drag over the division. The dispatcher knew only too well that even cutting the load and triple-heading her, it would be touch and go over the heavy grades ahead.

The leading engine cut off and grabbed a tank of water while Engineer Ryerson shoved the cut into the spur. Three hoppers had backed over the switch when the fourth split the snow-filled points. Before Johnny could get his big engine stopped, the wheels of the hopper were on the ties, and the storm had the ore drag licked.

WITH THE MERCURY tobogganing downward, working in wind-driven snow became a major problem. Yet despite the danger of frost-bite to fingers and toes, the French-Canadian gandy dancers picked the snow from the switch points under the watchful eye of Conductor Peterson until sufficient had been cleared to allow placing of the re-railers. Then came a bad moment. The gandy dancers faced the problem of spiking the re-railers to the ties. There just wasn't room to swing a maul under the hopper, and the re-railers must be spiked solid if the derailed trucks were to climb back on the rail, when they made the pull.

Big Jack took in the situation at a glance. It was up to him to crawl under the hopper and tap the spikes home for he was strong enough to do it. Failure to derail the car meant calling for the big hook which might mean hours' delay.

It seemed an eternity before the conductor at last crawled from under the hopper, having achieved the impossible. His overalls were ripped, his face was frozen, and one cheek was bruised where it had struck a truss rod. But there was a note of triumph in his voice, as he entered the cab.

"If the luck's in, Johnny," he said, "we'll soon be rolling again. But if it's out, then we're licked—so pray for a miracle."

The conductor's lantern moved slowly up and down in a go-ahead signal. Engineer Ryerson shoved the air reverse lever ahead until through his feet braced on the deck and hands gripping the throttle, he felt the gathering steam in the cylinders. This was the moment. He opened the throttle gradually, notch by notch.

The engine moved ahead slowly, then shuddered to an abrupt stop as the brake valve shot into emergency position in response to Big Jack's washout signal. A vague uneasiness possessed the engineer as staring backward with eyes slitted against the driven snow, he watched the conductor's broad shoulders disappear under the derailed hopper. It was nothing that he could explain, just a sense that the next pull with the engine would spell the difference between triumph and disaster.

Big Jack backed out from under the hopper. The derailed trucks were lined up with the re-railers, and a steady pull would do the trick.

"She's your baby now, Johnny. Pull easy when I give the signal, and keep going."

Johnny felt tension in him like a raw burn. Perspiration was beginning to gleam on his face. He made a weary gesture; then, as he gripped the throttle he caught the fireman's perturbed look. Tommy was gazing fixedly at him, his face white. When he saw no reaction in Tommy's eyes, he realized that the fireman was gazing at the hands gripping the throttle, and those hands were shaking.

With a great effort, he steadied himself, easing the throttle out gradually. He knocked down the sand lever, and the drivers, feeling the grit beneath their flanges, moved the big engine slowly. The drawbars took the strain, the derailed wheels bit into the re-railers, then began to climb upwards.

Holding the throttle open in a mighty grip till the muscles of his arm ached, the engineer edged his engine ahead. Had to keep moving slow. Steady and easy does it. He muttered it over and over again as the heavy engine eased ahead.

The end of the derailed hopper was rising, at first almost imperceptibly, then while the eyes of the watchers were trained immovably on the wheels they climbed an inch, two inches. Big Jack and the gandy dancers stared fixedly. The heavily laden hopper was up on the re-railers. Suddenly, it wobbled and tilted at a crazy angle. A sudden jerk would send it toppling over.

But the engineer was doing his part. Higher and higher went the hopper, till the derailed trucks were high enough. Another foot, and they would drop into place on the rails, or back on to the ties. Big Jack's lantern moved slower until the movement was scarcely visible. The exhaust died in the stack, and the trucks dropped back on the rails. The lantern swung a stop signal. Tight throats cleared.

THE GANDY DANCERS withdrew the spikes from the re-railers, then hung them in place on the tender clamps. Arch bars and brake rigging of the hopper were examined and found in running order, then Big Jack strode up into the cab to congratulate the engineer.

"Nice going, John. Take a bow from the dispatcher." The conductor's ruddy features were grim, as he continued. "DS says all train movement is at a standstill, so we own the road from here in. We'll be triple-headed out of here, and orders are that you're to handle the leading engine. This ore has got to go through, and the brass hats are counting on you, John."

The engineer stared at the conductor. His broad shoulders were bent with exhaustion and his arms seemed weighted, but a smile formed at his lips.

"We'll do our damdest," he replied, "but I ain't making bets."

"You've got power enough to make a hell of a good try at it, so take 'em away. I'll catch the crummy as she goes by." Big Jack clambered out of the cab and disappeared in the storm.

Flanges ground down on the icy rails as the tripleheader swung out of Bordeaux, propelled by the tremendous driving force of the three giant engines. Out of the night, a new voice came down on the wind—a sullen, sustained roar that chilled the hearts of the engine crews. Hearing that menacing voice, Engineer Ryerson picked up the drag with all the pent-up power in the boiler of his engine. He talked to her. He cajoled her, and she talked back to him. But even his wariest skill might not be

good enough to win out. The chips were down.

The ore drag was running easier now that the journals were warm. The tripleheader was going all out now, getting a run at the stiff grade ahead. Halfway up the hill, the throaty cough of the exhaust became a rasping croak. Johnny slammed open the cab windows. The exhaust told him all too plainly that the engine was lifting water, destroying the superheated steam and lubrication.

Failure was written heavily across his features as the engineer closed the throttle and his engine stalled with a despairing grunt. There was no alternative but to back down the grade, blow the dirty water from the boiler, and take another run at it. If he had to fail, at least he would go down fighting.

Johnny controlled the speed of the drag backing down, because of the danger of a warm wheel cracking in the low temperature. His restlessness to get to the bottom and start again made the descent seem unending. But finally with a grinding of brake shoes against the wheel treads, the heavy drag jolted to a stop on level track. There followed immediately the muffled roar of steam from the blow-off cocks as the engineers blew down the boilers. They would have to be clean to take the beating that they would get on the next run for the hill.

Reaching above his head for the whistle chain, Engineer Ryerson whistled off. The short imperative blasts seemed to shrill: "Let's go! Let's get it over with!" His face, as he peered at steam and water gages, was gray and haggard; but the lips were still drawn tight in his determined face.

Sand spurted beneath the drivers while every ounce of power was called upon. Boosters and throttles opened wide, the three engines lifted their heavy burden, gaining speed in an all out effort to climb the hill. Johnny felt as if he were riding on a wave, driven forward with it, cutting through the drifting snow. He prayed this time they would make it.

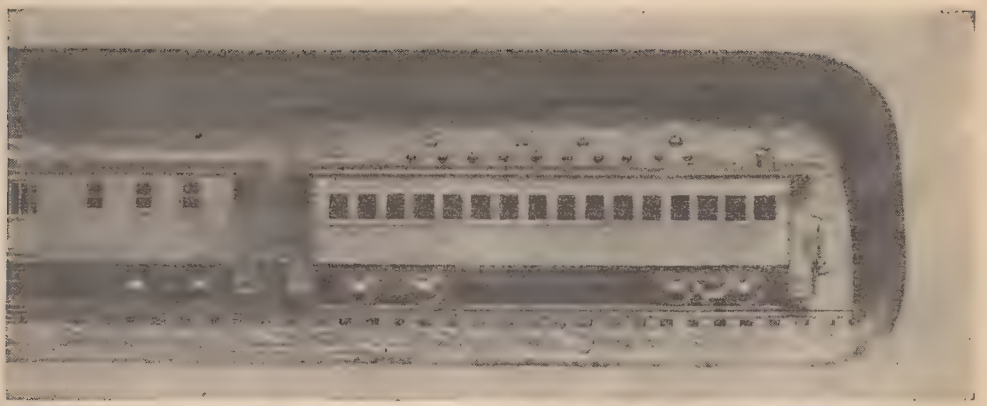
Rolling at a drunken angle to the curve, the tripleheader swung out, straightened on the tangent, then hit the foot of the grade. The exhaust had become a steady roar, and perspiration streamed down the fireman's grimy features, giving them a grotesque appearance, as he helped the iron fireman with the scoop.

With a triumphant ring in her exhaust, the 4103 unfaltering in her stride, topped the summit. It was all gravy now over the level stretch to the terminal. As the ore train rolled past the yard limit board, the night shift of the aluminum plant opened up the whistles in a salute to the engine crews who had brought her through.

Johnny Ryerson closed the throttle and slumped on his seatbox. He had gone the limit. Utter weariness overcame him. The world went completely dark somehow, spinning dizzily. Strong arms helped him down the gangway of his engine. He thought he saw the Superintendent's face there, but he wasn't sure.

Then, quite suddenly, someone gripped his hand so hard he was forced to shake the weariness from him. Johnny found himself looking directly into Superintendent Cameron's eyes, as the brass hat was speaking of blue chip runs and re-instatement to passenger service.

JOURNEY'S END for a Canadian Pacific driving tire. A Winnipeg shopman burns it cleanly through, freeing the shrunken metal from the wheel center



DISABLED World War I veteran Floyd S. Stallsmith, of 1433 Wood St., La Crosse, Wis., carved this bass relief model of Great Northern's historic ***William Crooks,*** and train, from section of an old black walnut railroad tie. Owner of the remarkable handiwork is Floyd's father, a retired Burlington engineer

GRIZZLED Bill Strapp pulled the latch on N&W's Number 35 for the last time on October 26th—his 72nd birthday. Firing the big J Class locomotive for him, as the train pulled into Columbus O., was his son Jimmy, who kept one eye on a bottle of milk kept warm by the boiler hackhead for grandson Mike, shown here with Bill

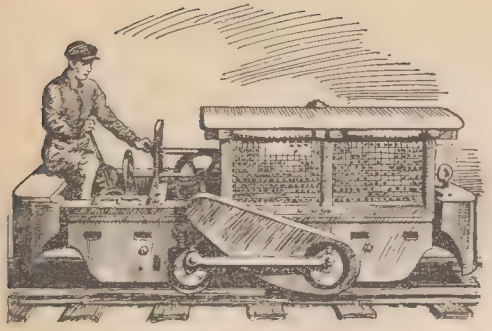
TUG McDANIEL, Southern Pacific brakeman who jumped from the pilot of a heavy freight near Fresno last year, to scoop a two year old "trespasser" up from between the rails, says he got more exercise reenacting his part in the drama for Sparky Heilbron, Espee reporter, and David L. Joslyn, Espee photographer

OPPOSITE PAGE: Railfan haunt is Rowlesburg, W. Va., where, from the little ***New Howard Hotel*** veranda on the right, one can watch the unending battle of B&O tonnage up mountain in both directions (Rowlesburg lies on the floor of the Cheat River Valley). Engine keeling to the curve is 2-8-8-4 Number 7607

Light of the Lantern

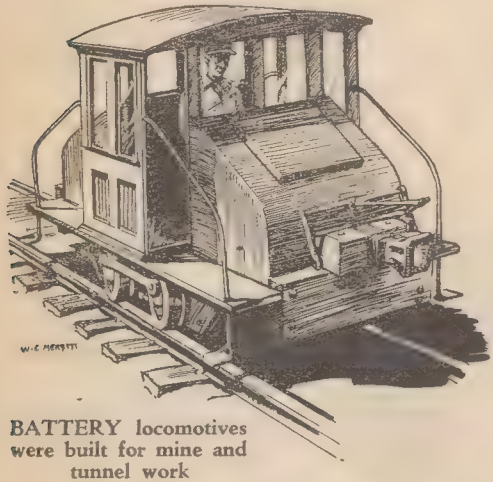
Bell Engines

By G. W. O'CONNOR

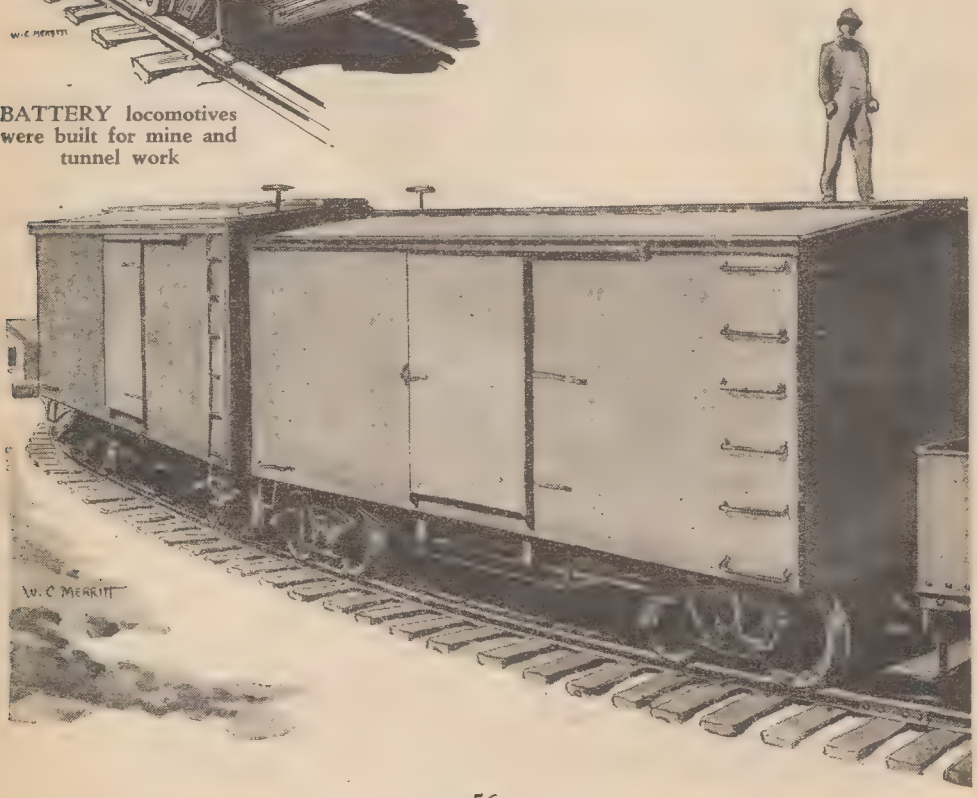


ARMY called on Bell for gas-driven dinkeys using Buda motors

BACK in 1908 a young man climbed into a Stanley Steamer at Yonkers, New York, one morning, and rattled across the Bedford Hills in a cloud of dust and chicken feathers, bound for Chappaqua. It took a born mechanic to urge an automobile over twenty miles of unpaved highways in those days, and the



BATTERY locomotives were built for mine and tunnel work



purpose of the trip gave a further clue to the driver's inclinations. He wanted to see for himself the greatest engineering feat of the era—the huge Catskill adquaduct at that time being pushed across Westchester County, enroute to a couple of million New York City water faucets.

Pulling to the side of the road at Chappaqua, the young man watched a chain of cement cars being inched along a narrow-gage construction railway by two little gasoline dinkies. Chances are the aquaduct workers found his steam-driven horseless carriage equally interesting—at any rate he was soon talking with the boss of the outfit, a Mr. Baxter.

"My name's Bell—Harvey W. Bell," the young fellow said. "I'm manager of the Stanley Steam Automobile Agency in Yonkers."

He could have added that his father was mayor of the same city, but at the moment he was more concerned with the performance of the gasoline dinkies.

"You know," he went on, "I believe you could get more power out of the same size unit if you used one of these Stanley engines. And it would cost a whole lot less to run."

The contractor was impressed. He examined the mechanism closely and suggested that Bell work up a design for an industrial locomotive of this sort.

OUT of the casual meeting just described was born the "Bell locomotive" which, for a dozen years, was to be a sturdy cart-horse of the construction industry; a geared engine which differed from the Shay, the Climax and the Heisler by adding moderately high speed to impressive tractive effort.

The first Bell product, built at the Stanley Steamer garage in Yonkers, was little more than a steam automobile on railroad wheels. Its chief novelty, from an engineering standpoint, was a vertical boiler built to withstand the remarkable pressure of 500 pounds to the square inch! Of Bell boilers we will have more to say, directly.

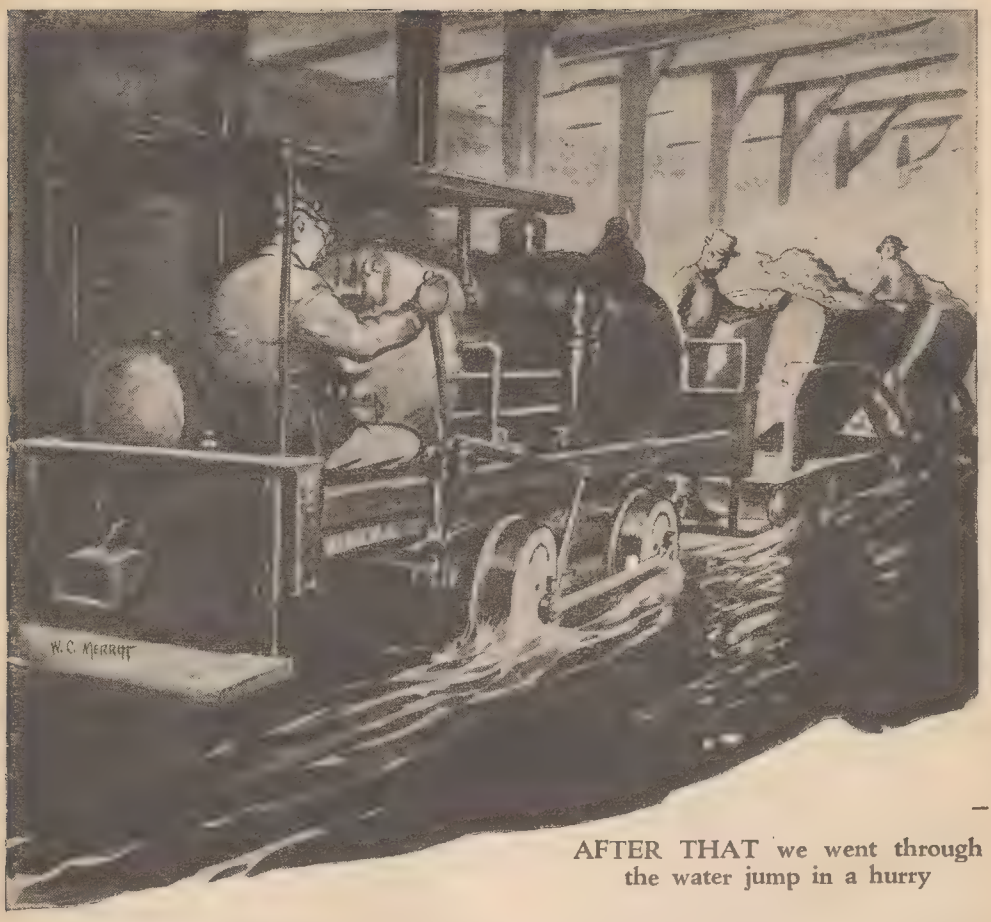
So successful was this first locomotive that others were soon in demand. Gradually they acquired more and more conventional locomotive characteristics. Injectors replaced water pumps. Oil, instead of gasoline, became the accepted fuel, and boilers were placed horizontally. The relative locations of various parts were also altered.

In one respect, however, Bell's locomotive retained a valuable automobile feature not found to so great an extent on other engines. They were built almost entirely of standard, interchangeable parts. Examination of the drawing on Page 60 shows how this was possible.

Notice that the power plant—cylinders, rods, valve-gear, gear wheels and shaft—was a unit in itself, running in an oil bath and mounted much like a booster engine, except that there was no cut-out when it got up to speed. Roller bearings were applied to all moving parts other than pistons and crossheads.

This separate engine unit was applicable to any size locomotive, regardless of track gage; an important feature since

Short on Looks and Long on Performance, Products of the Bell Plant Made Construction History Before the Era of the Modern Motor Truck



AFTER THAT we went through the water jump in a hurry

construction railway orders called for a limitless number of wheel spreads. Smokeboxes and fireboxes, too, required little alteration to suit different widths of frame. Almost the only variables, then, were the axles and crossmembers of the frames.

An additional feature of flexibility, from the construction standpoint, was the use of two Stanley engine units in the bigger locomotives, instead of a single, larger power plant. This made for a reduced number of stock parts and sizes.

The boiler, as shown in the drawing, was of the horizontal fire-tube, water-level type (not a flash boiler). Turned out by the Stanley Steam Car people, its shell was wound with piano wire, giving it tremendous strength. A licensed engineer was not required to tend this safety boiler, a great advantage in "dinkey" work. Practically explosion proof, the design did away with the customary crownsheet, and had fire-tubes even in the steam space. The full heat of the burner was deflected by baffles so that only a portion of it passed through these flues, protecting them, while at the same time imparting a small degree of superheat to the steam. A soft plug in the center of the boiler guarded that member from damage by low water.

The oil burner was operated by a steam jet which used the atomizer principle to lift fuel to a nozzle and spray it into the firebox. When the jet was shut off, oil still in the pipe would return to its own level without dripping into the pit.

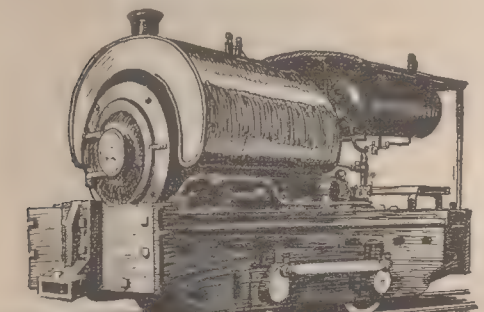
Again referring to the drawing, we see that a sub-frame was interposed between the main frame and the rails. Rigid journal boxes could be bolted to it because all road shocks were absorbed by eliptic springs

before they reached the body of the locomotive. This arrangement enabled Bell locomotives to travel over very rough track with little danger of going on the ground.

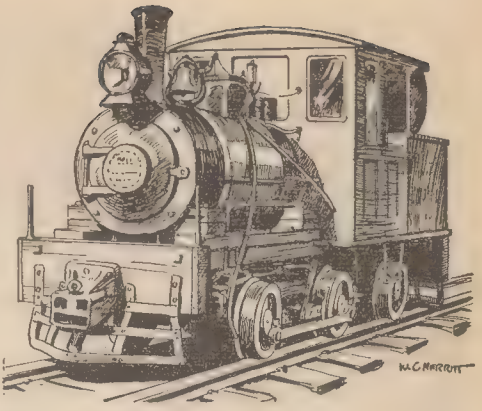
Notice that the pulling power passed through these same eliptic springs, enroute to the couplers. Back in the early days, when Bell had not yet learned the need for strong springs to withstand such strains, a set of them gave way as one of his engines started off under load, letting the sub-frame run right out from under the boiler in the best slap-stick comedy manner.

BELL engines were used in all kinds of dinkey locomotive work—on plantations, in stone quarries and clay pits, and for construction work, throughout the United States. They found, too, a considerable export market in Cuba, South America, and the Philippines. One of their most interesting jobs was that of furnishing transportation in the long under-ground bores which were to become New York City's intricate subway system. There they stayed, assisting in ballasting and track-laying operations until the job was finished.

I was working with Mr. Bell at the time the Seventh and Lexington Avenue lines were under construction in 1917. Our offices, then, were at 30 Church Street (the Hudson Terminal Building), and a loop of the Seventh Avenue line ran almost by the door. Mr. Bell used to say that we had



SADDLE TANK MODELS ranged in weight from three to twenty tons



SIX-WHEEL JOB gave greater weight distribution; turned on a dime

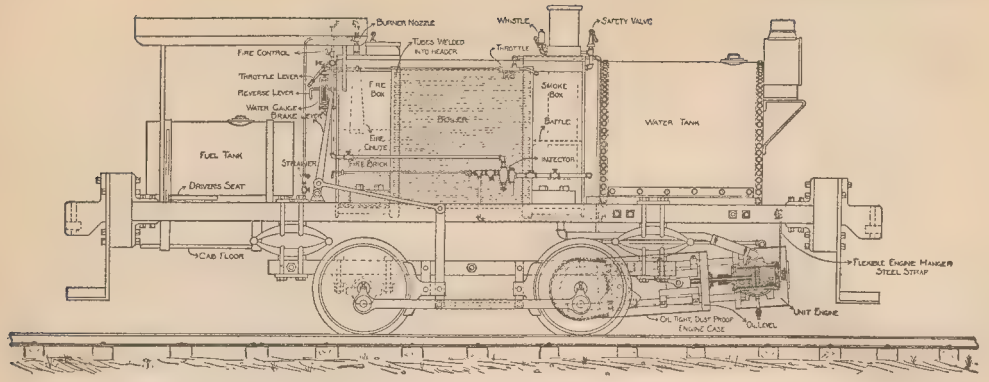
our demonstrating floor downstairs, and certainly we did take nearly all prospective purchasers down into the subway to see the engines at work. When it was practicable we even gave them a ride on one of them.

I recall the inventor showing some Mexican gentlemen how his locomotives operated. It happened that they were dyed-in-the-wool gasoline-engine men, and, to pile one difficulty on top of another, none of them spoke English very well. They finally made it plain that they wanted to see the clutch and transmission. Patiently Mr. Bell explained that a steam engine did not need that form of drive. It took a lot of time and hand-waving, but at last he thought he had them pretty well instructed on the fundamentals of reciprocating steam power and they started back to the office. Suddenly one of them stopped.

"Show us," said he. "Where is the magneto!"

About this time I had the pleasure of operating a seven-ton engine, owned by the Contracting firm of Engel & Hevenor, which was being used in track-laying and ballasting of the underground. The experience of running her under actual working conditions proved invaluable.

One night a severe thunderstorm announced itself with a series of flashes that stabbed in through the ventilators. Soon water was flowing down the stairways—spreading across the floor of the tunnel—



STANDARD BELL ENGINE DESIGN, showing general arrangement of parts. Note flexible steam connection to cylinders

creeping up the webs where they dipped near Houston Street—then closing over the rail heads. On our first trip over this section we went very cautiously, only to find that the engine slipped too badly to make the grade on the far side of the submerged track. Backing up for another run at it we spun to a stop on the opposing grade. Only by see-sawing to and fro with increasing momentum were we finally able to reach dry rail. On the rest of our trips we went through the "water jump" in a hurry.

On another occasion, when the locomotive was standing idle, I was called upon to fire her up for a demonstration. When I inspected the boiler I found that it had been drained. The best way to replenish the supply was to unscrew the safety valve and feed water in through the opening. It happened that the nearest source was a street hydrant, with a couple of lengths of hose brought down through an opening in the tunnel roof. Examining this hose I found that I could get it no nearer than a foot from the end of the safety-valve pipe.

Time was short and I had to do something. So I wired the hose to the side of the smoke stack, aiming it, as best I could, at the intake pipe. Then I went up to the street and cautiously opened the hydrant. Since I couldn't see the engine from that point, I had to guess at the adjustment of the valve. But when I got back to the locomotive I found water playing out of the hose in a graceful arc—straight into the center of the pipe. I couldn't have guessed it like that again in a hundred years!

DURING World War I the Bell company built a few small gasoline driven engines. Probably the one which was seen by the greatest number of people was a dinkey which the Army bought for use at Fort Wood, New York Harbor. It was operated, all through the conflict, on Bedlow's Island, where the *Statue of Liberty* stands.

I well remember the man who came to the office to place the order. He had an accent German enough for the Kaiser, himself. When Mr. Bell asked him what the steepest grade on the line would be, he held up his arms to indicate a slope of nearly 45 degrees and said "aboud like dot." As I recall, the actual measurement was somewhere between four and five degrees, but for some reason it did look almost as bad as he had indicated.

One of the remarkable things about this little locomotive was that while it represented Bell's first experience with gasoline powered dinkies, the job was ordered, designed and built, in exactly ten days.

Today the steam dinkey business is just about chuffing its last. Gasoline and Diesel engines have usurped the place the little kettles once occupied. But during their hey-day, Bell locomotives did their proud share of the world's work and it is pleasant for me to recall my experiences with them.

Information Booth

Each month the Lantern Department prints answers to rail questions of general interest, submitted by our readers. We do not send replies by mail

1

WHEN *was the vestibule introduced on American passenger trains?*

Crude attempts were made to provide a safe covered passageway between railroad cars as early as the years 1852 and 1855 when patents were taken out for devices which provided diaphragms of canvas to connect adjoining cars. These were applied to coaches on the Naugatuck Railroad in Connecticut (now a part of the New Haven) in 1857, but they were used mainly for ventilation, providing a means for circulating air through a train so that car windows could be kept shut. Unsuccessful on that score, they were abandoned after a trial of about four years.

Then in 1886 George M. Pullman set about designing a car-end which would produce a continuously enclosed train, and at the same time allow sufficient flexibility for rounding curves. His efforts resulted in the built-in vestibule, consisting of elastic diaphragms on steel frames. Pullman vestibule cars were run on the Pennsylvania Railroad in June, 1886. The device was patented the following year, and the first completely-equipped train was operated over the Illinois Central between Chicago and Otto, Illinois, on April 11, 1887. It was placed in regular service on the Pennsy a few days later.

2

I HAVE READ *that Mexican railroads control 162 miles of line in the United States. What system is this?*

The Texas Mexican Railway is the line in question. Trackage runs from the center of the Rio Grande Bridge at Laredo to Corpus Christi, Texas. Chartered in March, 1875, in Texas, as the Corpus Christi, San Diego & Rio Grande Narrow Gauge Railroad Company, the present name was adopted in June, 1881. The road received a land grant of sixteen sec-

Photo by Ted Gay, 156 Van Buren Ave., Teaneck, N. J.

ROAD-TESTS for a T-1. Duplex 6111 clicks over the Harrisburg bridge, after an experimental run to iron out curving difficulties resulting from her long, non-articulated frame

Photos by Friend H. Barrett, 137 Chenango St., Binghamton, N. Y.

BINGHAMTON, N. Y., station of the Delaware, Lackawanna & Western. Town fathers are now agitating for a three-road Union Depot

tions to the mile from the State of Texas. Until February, 1938, the Texas Mexican was controlled by the National Railroad Company of Mexico, through ownership of the entire capital stock and bonded debt. Control then passed to the Central Hanover Bank & Trust Company of New York. In August, 1940, the ICC authorized the Texas Mexican to operate over a line of railroad to be constructed for the U. S. government from Corpus Christi to the Naval Air Station at Flour Bluff, a distance of about 19 miles, all in Nueces County, Texas.

The Mexico North-Western Railroad Company, whose main line extends from Chihuahua, Mexico, to El Paso, Texas, 476 miles, controls through entire capital stock ownership, the El Paso Southern Railway, which owns a bridge over the Rio Grande and operates a little over three miles of terminal trackage in El Paso.

3

WHAT *is meant by the bonding of rails?*

In signal operations, electrical current passes through the rails. The narrow gaps between the butt ends are bridged by welding copper wires from one rail web to the next.

4

ITALIAN RENAISSANCE TOWER *of the New Haven's Waterbury, Connecticut, station has always interested me. Why was that ornate design chosen?*

The story goes that when road president C. W. Mellon visited Italy he was greatly impressed with the beauty of the Torre del

Mangia in Siena. He decided to have an adaptation of it worked out for the next important station to be built, and the architectural firm of McKim, Mead & White designed it.

5

WHAT *was the record set by the Canadian National's oil-electric rail car Number 15820, when it ran Montreal to Vancouver non-stop in November, 1925?*

CNR's 15820 made the trip from Montreal to Vancouver, 2,937 miles, without stopping, in 67 hours, with an average speed of 43½ miles per hour.

6

GIVE *specifications of the Western Maryland's new Shay and tell where it is being used.*

Locomotive Number 6, the Western Maryland's new Class 150-3 Shay-geared engine, operates on the Chaffee Railroad, a 3-mile coal-mining branch, extending from the main line at Chaffee, West Virginia to Windex, Maryland, on the headwaters of the Potomac. This trackage, originally narrow-gage, was built in 1904 by the Three Forks Coal & Coke Company. Conversion to standard gage came in 1912. WM acquired the line in 1929 and has operated it ever since.

Number 6 is designed for grades of seven to ten percent and a maximum curvature of twenty-two degrees. She can handle 5,560 tons of level track at ten miles per hour, or 156 tons on a seven percent grade. The boiler is a two-ring, extended wagon-top type, 28 feet 3 inches long and fifteen inches off center line.

BELOW: Double-heading the *Valley Daylight*. Southern Pacific's 4352 and a Lima-built 4-8-4 champ at Los Angeles Union Station, impatient to be off for San Francisco

Photo by Wendell H. Kinney, Los Angeles

Photo by Wm. A. Schrade, 81 Highland Ave., Middletown, N. Y.

NEW YORK, ONTARIO & WESTERN passenger trains expand with the heat—sometimes as much as six car-lengths. Vacation traffic was at its peak when this photo of 402 was made at Middletown, N .Y.

Side and roof sheets, as well as the furnace crown are each of one-piece construction with riveted seams uniting them. The engine is a vertical three-cylinder single-expansion unit, incorporating piston valves and Stephenson valve gear. Cab and coal space are built as one.

Specifications of the engine follow:

Cylinders	17x18
Drivers	48
Pressure	200
Weight of Engine	324,000
Tractive Force	59,740
Builder	Lima
Date	1945

7

LIST *the Baltimore & Ohio's marine equipment in New York harbor.*

B&O's New York harbor navy consists of seven tugs of from 850 to 1,000 horsepower; two steam lighters; four steam derrick lighters; one gasoline derrick lighter; fifty-one covered barges; eighteen deck scows; thirteen refrigerator lighters; twenty-one car floats; two pieces of work equipment; a pile driver; and a hand derrick lighter, making a total of 121 units.

8

CAN YOU *furnish any particulars on the new road Diesel freight locomotive which the Seaboard has ordered?*

Baldwin is constructing a 564,000-pound Diesel-electric, the world's greatest in size and power. Designed to pull a heavy train at eighty-five miles per hour, it will have sixteen driving wheels and eight guiders. The Seaboard plans to put the new unit in service next fall for experimental purposes on heavy, fast freight runs.

The first Baldwin road Diesel, which underwent tests on a number of different lines, has been sold to the National Railways of Mexico, where it is operating as two 2,000 horsepower locomotives on the 1,226-mile main line between Mexico City and El Paso, Texas.

9

HOW LONG *does it take to wheel a locomotive in a large, modern shop?*

The whole operation of wheeling requires only twenty-five to thirty minutes after parts are in place.

10

FURNISH *data on Canadian Pacific's experiments with flame-hardened piston ring grooves.*

Canadian Pacific received forty-five 4-6-2s from the Canadian Locomotive Company in Kingston, Ontario, last year. Numbered 2418-2462, the last ten, 2453-2462, are equipped with flame-hardened ring grooves. Five of these engines also have die-made aluminum crosshead shoes. These are both experimental features, never tried before in Canada. The flame-hardening of piston ring grooves is expected to reduce maintenance costs by prolonging life of the pistons. A comparatively recent process, flame hardening has been used extensively on munitions contracts, particularly on tank-turret tracks.

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LIST *major features of Illinois Central's new all-electric dining car, which entered service late last year.*

IC's all-electric diner, first of its kind on an American railroad, was modeled after an electric galley developed during World War II for use in submarines. Its equipment includes heavy-duty electric ranges, an automatic broiler, automatic deep-fry kettles, electric dishwasher and subzero freezing units. Generators placed beneath the floor of the car will produce adequate power. The car was designed and built by the Edison-General Electric Appliance Company.

TRUE TALES OF THE RAILS

Actual Happenings
Told by Eye Witnesses

Time Freights

By FRANK W. POWERS

THE TERM "speed," when used to describe time freights along Canadian roads during the winter and early spring months, can be greatly overrated. After spending the best part five days in a cab butting a path through high mounds of thick-packed snow back in March 1922, I decided that any resemblance to the actual meaning of the word was pure coincidence.

I was running out of Humboldt, Sask., west to North Battleford that winter, and when the first thaw came around the beginning of March, we were all suspicious of the unusually fine weather. Big Dave Monroe, my fireman, and I were called the afternoon of March 12th to take time freight Number 202 to North Battleford at 6:30 p. m. Spring warmth was in the air then, and we had the 2012, one of the best engines of that class owned by the Canadian Northern. So we were in particularly gay spirits as we strolled over to the Club Cafe to put a good supper under our belts before starting on our night run. Getting the "speed," as time freights are known in Canada, meant a 10 percent reduction in tonnage which made for an easy trip.

By the time Gus and his girls had satisfied our hunger and we had ambled out of the cafe, the sky was clouded over. In the yards our engine stood ready, so we hooked on to our train as a northeaster came howling in from the Saskatchewan prairies. Before we even had the air pumped up, the snow was whirling about us so that it was all I could do to see the car inspector 30 cars away. We got our air test and the car toad volunteered to close the main line gate behind us. When I pulled out on to the main, we could hardly see beyond the tender, and seeing back to the signal would have been impossible.

The old CN twenty-hundreds were a light consolidated with a large tender for that class of power, having a water tank of 6,000 Imperial gallons. However, we had 59 miles to go for water, about half of it uphill. On the drags we carried water cars to make the long runs between tanks; but we never used them on speeds since they are the worst headache on the road, though sometimes necessary.

As we pulled into Denholm, 13 miles out and the first telegraph station, we were facing one of the worst blizzards of that year. I stopped, and when the skipper came up, told him we would have to reduce. Conductor-fashion, he figured he had a train and would stay with it. I had different ideas and aired them in my message to the dispatcher. In short order, the reply came to cut to whatever Engineer Powers thought he could take to Ceepee for water.

I told the skipper to set out the head twenty, regardless of what they were; and to make it quick or we'd set them all out. Soon we were on our way again. But what a night! 14 miles up to Maymount, then downhill to Radison where we had a meet and found a red board. I went in to see what was the trouble to learn that Extra 2102 was on the ground a few

miles east. We'd wait till she came by.

Our water was getting low, but I got into the siding. In about two hours, the 2102 came along with its head end. They had a string of empties, while a wooden box with low, wooden sand boards rode along in the middle of the train. These low trucks had collected the heavy snow until it raised the truck off the rails, taking seven more with it. As luck would have it, by the time Engineer Tommy McDonnald and his engine got back, the crew had shoveled the snow clear, so that cars walked meekly back on to the rails.

DAVE AND I had eaten breakfast at the local Chinese restaurant when Tommy pulled in with the rest of his train. Since he had a water car, the DS asked him to set out the rest of our freights except for two cars of live stock. I had less than a foot of water in the tender with 14 miles still to go. Luckily, most of it was downhill, but this included some nasty snow cuts.

It had stopped snowing now, but the wind was still a gale and drifting badly. The board was out at Borden. The dispatcher asked if I could make the tank, 7 miles downhill on track that seldom drifted. This was okay and I thought I'd have no bother, but his next request was one of the most peculiar I've had in my 37 years railroading in Canada.

"Will you please go up Langham ahead of the plow and break trail for him?" queried the DS.

The North Saskatchewan River lies in a fairly deep valley between the slopes of the Borden and Langham hills, both ruling grades over the subdivision. Yet although Langham was one of the worst places on the 148-mile long subdivision for snow drifts, snow very seldom piled up much on Borden Hill. Since I was at the top of Borden, with reasonable luck I could make the Ceepee tank on the river bank for water.

We were all indignant. If I was going to use my pilot to break trail, I'd have to know why. Since the dispatcher had said "please," he wasn't adverse to giving a full explanation. Engine Number 1242, a small ten-wheeler, was on the plow, and from his reports, she would be absolutely useless in the ten-foot, blizzard-packed drifts. We certainly hadn't enough water to wait around to double-head the plow; and anyway, the less often I'm placed behind one of them, the better I like it. So I yessed the DS and went off.

Our engine just reached the tank. We filled her tender and got a clean fire before we backed up about a mile to gain momentum. Praying she would stay in the iron, we hit the first drift fast and hard, got through to another and cut through that. I eased up a little on each until I felt a bad rail where someone had slipped his drivers and so made a good landmark for

running blind. I knew we were inside the Langham mile board, so with a sigh of relief, I pried my window open, shut off for the siding switch, heading in to wait for the plow.

Sectioneers were cleaning out the switch points. Spying the foreman, I asked him to send his men into the coal pit to shovel out a few tons of snow that had accumulated during our trip up the hill. While they shoved some coal over against the gates, we could go over and put the nose bag on again. For when a crew is working in sub-zero weather, food's more important than sleep and you don't pass up an opportunity to get it.

After the plow went through, we followed him to Dalmeny, where we took on coal and pulled into the station to get a line on conditions before we took that water. This station was famous for its bad boiler water. The operator told us that we were going into Saskatoon because the road east of Warman was tied up tight. Warman was the next station where the north line to Prince Albert crosses the main with Saskatoon just fourteen miles south along this branch. Having been out in the cold for nearly 24 hours, we had no complaints at this invitation to a steam-heated bunk house and city eats.

THE TIE-UP bound down the whole district. When we got to the roundhouse in Saskatoon and asked for information on what to expect, the answer was "heaven only knows" and other more colorful expressions of the same idea. We took it easy until the second morning following, when Bill Steves, the locomotive foreman, told us we were to take two cars of *Crow's Nest* coal and go over to Howell on the main. Some of the boys were snowbound and needed to be dug out.

Crow's Nest coal was the best engine coal and magic compared to the slack we were getting on the Canadian Northern. Our engines went steam-crazy on it, so naturally we started for the battlefront in high spirits. The only joker was that there wasn't a water car available and we had another 59-mile sprint from Clarkboro into Humboldt with plenty of trouble territory in-between. We took a full tank of water, then went east three stations to Howell.

Jack Cherry was in the back track with 2014 and his train, with about six inches of water; Bill Louth on 1248 and Tom Kidd on 2013 were stuck with the plow at the east mile-board. Both had barely enough to keep the heaters going. We went and pulled the 2013 out of the drift, but we had to leave the 1248 until morning. Soon after dawn, when the plow- and section-men had taken some sleep, we rode out again and shoveled the ten-wheeler and plow clear.

Kidd had enough water to make one try at the drift and so far I was pretty well fixed. I linked on to the plow, with the 2012 behind me, and together we drove against the snow banks. We dug so far into the drift that we were stuck; it was past noon when they cleared us. Kidd's tender was dry by this time, and mine was getting mighty low. I gathered up the three cripples and towed them back to Clarkboro. I had all the water in my boiler and barely enough in the other boilers to keep them alive; still we got by, and Cheery and Louth then headed for Saskatoon.

Filling the boilers and tenders to capacity, Kidd and I started back for the plow. It was dark when we arrived and we called off work until daylight. After several attempts, we made about a car-length of headway. But since a warm Chinook had come up for about two hours the preceding night, followed by a freeze, there was a foot and a half of honeycombed ice on top of the drifts. A plow without a drop-nose prow was almost useless, but we kept at it again and again. Each time the section hands would dig us loose.

George Eiford, the Prince Albert roadmaster who was with the plow, stepped off the top of the cupola on to the snow bank. I followed him out, and the pair of us—both over 200 pounds—could not make a dint in the surface of that ice-encrusted snow.

"Well, Frank," said the roadmaster, "we might as well forget it until Saskatoon sends over some workmen to pocket this drift and the next. I sent for them, and they should arrive this noon." ("Pocketing a drift" meant to dig pits in it about 15 feet long at 20 to 30 intervals, depending upon the depth and hardness of the snow.)

IT WAS well past noon when they got us loosened up and we were back at Howell. We dove toward the beanery and had a feast. Then after we had put the plow and caboose away—so as to have both engines free to go for water—we waited until Tommy McDonnald and the 2102 pulled in with two coach loads of laborers.

During the interval, Dave Munroe and little Billy Miller, Kidd's fireman, bewailed heir fate at not being in town for the big St. Patrick's Day dance that evening. Dave was a good stepper and a ladies' man, while Billy just liked to dance. Kidd and I, however, weren't too brokenhearted at the prospect of missing it. We spotted the tank after the snow-shovelers had shown up, and when we returned to Howell, we were told that we could make a daylight run for home since the cuts would be pocketed by that time.

Because it was Dave's turn to watch the engine, I was just getting settled in the coach when in walked Kidd and Eiford. According to their report, Dave had it all fixed for us to go through so he could get at least one dance home in Humboldt. I was slightly annoyed, and vowed he'd do little dancing that night. Nor did he, for there were still long hours ahead of us. By the time I got back into my fighting clothes, the outfit was assembled: plow, 2012, 2013 and the crummie. I was familiar with the plow from handling it out of Prince Albert.

It was a wooden job but George Eiford had had it reinforced some years before, having two 12x16 seasoned oak timbers put out full length for draft sills; but I felt it would take more than two hogs to drive it through. We started for the drift for the third time; it was downhill, a mile away. When we hit, the engines lurched, and I figured this was it. I dropped her a few more, as there was nothing else to do, and trusted to luck. Anyway, I was getting mad. We had been out there for more than thirty-six hours facing some of Saskatchewan's worst bucking. Yet instead of the plow coming in the front window and 2013 going over the tank, the wedge buried itself again. It was only then I remembered the pockets which the laborers had dug to relieve the pressure, and cursed my stupidity. We were still going when George whistled us to a stop. Some moments later, back came George with the plow man, a small foreigner who looked mighty scared.

"Get the hell back to the dog-house and stay there," said George to the already disappearing form. First thing he wanted to know was if we were okay.

Aside from the two firemen hitting the boiler-head pretty hard when we struck the drift, we were fit and ready to be off just as soon as we recovered some steam. Even *Crow's Nest* wouldn't hold the putty against the fast beating those hogs were taking from the frozen drift over 16 feet deep and 1,000 long. But George started to laugh when he remembered his plow assistant. The poor guy went off his nut and tried to grab the air when we hit the pockets.

It was a little over a mile from where we stopped to the next drift. Eiford asked me what was beyond and I told him the real headache of the division. For three days, 2164 had been trying to open the stretch up without success. It was from 8 to 14 feet deep running about 2,000 feet long. The crew working from the east end had tunneled about four pole lengths with one engine. Eiford decided that as soon as we broke through the next pileup, we'd stop and take water, then with hot engines try to ram our way through.

When we started for the big one, neither Kidd nor myself had any sympathy for either our engine or fireman. We went straight through and the first time, still holding 20 mph as we exited from it. As

soon as the main line roadmaster who was with the 2164 heard us, he came out of his bunk car with his fur coat over his pajamas. Immediately after him, followed an amazed train and engine crew. The men could hardly believe their eyes and our report that we came through on the first attempt.

So we had reached Danna. But there were still two stations ahead that had not been touched since the thaw had become frozen. We set out again, having agreed that Eiford could ride the plow as fast as Kidd and I could push it, so he was not using the whistle except to stop us. The rest of the time he spent trying to hang on, for the track was not up to much in those days.

We stopped for steam twice during the next ten miles; when I hit a bad rail I knew we were only a few miles out of Humboldt with one last drift between us and home. I looked at the steam gage and she was back a long way so I gave Kidd the stop signal. He answered with an emphatic "Keep Going," so I knew Kidd was out of water but willing to use the last drop to help me through. My injector was still working, but it sounded off for going dry. As the engines leaped free of the drift, my injector broke but still we had come through.

Sailing down the main we eased right on to the shop track where we were greeted by a hostler and his helpers. The injector was all in the boiler, and with a grand gesture and well-chosen words, we tossed the cripple over to the roundhouse crew.

We were getting cleaned up in the bunk house when I finally asked the two firemen if they would dress before going to the dance. All the girls in town would be over at the big hop.

"How the hell do you expect us to dance," bawled Monroe, "when you've been batting us against those damn boilers ever since we left Howell."

With mock meekness, I explained that I merely thought they wanted to get in some dancing.

"Go to hell!" said the fireman with a dour look.

So it happened that our time freight rode in a little off the card due to the spring thaw. However, that was the end of the freeze for 1922, and we were soon getting speed over the tracks on the record.

The Compliment

By JAMES T. HOELL

WHEN you're just a kid operator and an old head conductor gives you a fine compliment, you never forget it. That's what happened to me—I'll tell you the story.

I'm one of those boomers who became a home guard. After starting on the Texas & Pacific in my home town of Grand Cane, La., in 1901, I worked for the Union Pacific, the "Q," and finally drifted over to the Espee at Ogden, Utah. I liked the Espee so well that I've been with it ever since. For the past thirty-six years I've been warming a chair in the San Francisco BD general office—in fact, I am so much of a home guard that I hold the record for continuous service in this office.

You needed real Morse in the days of all-telegraph wires. The telephone hadn't yet crowded out the dots and dashes on the train dispatchers' circuits. You had to be competent to get a job and to hold it. Gradually I'd become a good enough telegrapher to get by nicely everywhere I was sent. But a certain UP official decided to make an agent out of me, which didn't suit my fancy. That was why I quit the UP and hit the Q for a job. After a few questions I was given a pass with instructions to report to Chief Dispatcher Holloway at Alliance, Neb.

There were no block signals then. Rail-

"SOON AS I heard that tied-down whistle," said McCracken, "I knew what'd happened"

roads depended upon the skill and reliability of brass pounders and dispatchers to handle their trains. Most roads gave ops a pretty stiff examination. The Q surely did. A man named Brown handed me a tough telegraph test. After Mr. Brown had finished, he left the switchboard where he'd been sitting and came over to look at my copies of train orders and telegrams he had sent me. All he said was, "You're no ham, young fellow"; so I had gotten by again. Thereupon I was turned over to Chief Holloway, a tall slim gentleman who went through the Book of Rules with me.

For a while my work was the usual routine for an extra op. I relieved operators at various points, sort of marking time; Mr. Halloway was planning to use me in the division office at Alliance. On New Year's Day of 1902 he sent me to Crawford, Neb., near the South Dakota line, as night operator.

Well, I took a fancy to the town of Crawford and I liked the job. The agent there was G. E. Leming, an old-timer. I got along with him okay. The place was a far cry from the magnolia blossoms of my native Louisiana, but it was new to me and I rather enjoyed my cozy office with wintry winds howling outside. Crawford was a typical Western town. Sleigh-ride parties were a nightly occurrence; now and then I would slip out to go along on one of them. I was young, I found the cold bracing, and after I became well acquainted I had a swell time.

A small stream flowed about a mile west of town, and beyond that rose a high butte called "Lover's Leap," supposedly made famous by an old Indian legend. From this height you could view the surrounding country, and in any season it was rural scenery at its best. However, this was winter, and that brings me to my story.

ON THE NIGHT I'm telling you about, two regular evening passenger trains arrived, with the usual rush of tickets, baggage, express and with more or less genial cuss words exchanged with

the crews. I dragged my trucks alongside, worked the trains, and put away the loads I had received. Then the trains rolled on over the prairie. Snow was falling, driven before a strong wind that made the wires sing. As I entered the station I noticed that the thermometer, just outside of the door, registered 30 below zero. A good night to have an indoor job!

I gave my OS to the Alliance dispatcher, looked over the orders on my desk, poured some more coal into the big pot-bellied stove, and settled down comfortably in my office chair. It was early in the night and I shouldn't have anything to worry about until the arrival of First Number 45, the westbound manifest freight, due about 10:45. At that time the dispatcher would likely have orders for a couple of sections of that train, against opposing drags or stock extras. I had some clerical work to do and this would be a good time to do it. I moved over to the agent's chair and desk. While I was working up my freight bills, the sounds of the Morse instruments raced through my head, like subdued conversation.

James T. Hoell

Every few minutes some OS lad along the line would report a train coming or by his station. Over the message wire ran consists of trains out of Edgemont or New Castle, routine instructions to yardmasters or train and engine crews, coming from the chief at Alliance. I could hear it all with the dispatcher's wire rattling away at the same time. This was a trick all good Morse men learned: to concentrate attention on any one sounder they wished to, even with several going at once.

Eventually the wires quieted down. I'd finished my expense bills and abstracts and was looking out the window at the snow that drifted along the platform, and listening to the wind howl, when suddenly the sounder on the dispatcher's wire came to life. It was my call, "CO," repeated rapidly several times before I could get to the key and respond.

"Cy 5," he snapped, putting vigor into the clipped Morse.

That meant make five copies of a train order. Of course, at that early day we had only one form of train order; the "19" form that could be handed up on the fly was unheard of. All orders had to be signed, which meant that all trains must stop if the operator had his board red.

DS called Ardmore, the next office west, 23 miles distant. Ardmore answered. He then put out the following order:

"Extra east 1793 will take siding and meet 1st Number 45 eng 1711 and 2nd Number 45 eng 1725 at Ardmore. This order to extra east 1793 at Ardmore."

As I held the order for the superior train, I repeated first. Ardmore followed suit, while I checked my copy with his. This was then—and still is—a strict rule in repeating orders, to catch possible errors. All was fine so far.

Soon First 45 rolled into Crawford. Presently a cold gust of wind surged through the office as someone entered via the outer door and banged it shut. I turned to greet big Jim McCracken, the conductor. Snow hung from his heavy black mustache, while his snappy black eyes peered from under the visor of a cap pulled down over his ears. Here was a first-class railroad man if there ever was one, which goes to prove that even the best of them pull boners.

"Some night!" he growled, yanking off his cap and shaking the snow against the red-hot stove, which hissed and sputtered in protest.

I handed Mac his orders to be signed. As I did so, I heard Ardmore tell the dispatcher that the extra had arrived. That didn't please DS, as he had figured the storm would delay the extra so badly that they would not be at Ardmore for some time.

Of course, I knew all the meets were wrong now and had to be changed. I had given McCracken his orders and he was on his way out of the office. I called after

him and explained what Ardmore had said, adding that I was likely to have a changed meet for him. Mac came back into the office just as DS started calling me.

When I answered, the dispatcher said: "Get hold of McCracken, quick!"

I replied that Mac was standing right beside me. At that he snapped, "CY 5," and called Ardmore. Then I informed Mac that the meet would be changed to a point east of Ardmore.

"Okay, boy," he answered. "I've got a couple of cars to set out on the transfer track, then I'll come back for the order. Go ahead and take it."

THE Q used clearance cards at that time. I went ahead copying the order, not bothering to ask the conductor for his clearances which would have taken away his right to leave town. The new order read:

"Extra east 1793 will take siding and meet 1st Number 45 eng 1711 and 2nd Number 45 eng 1725 at Orello instead of Ardmore."

I could hear and see very little from the office window, and was surprised when, about fifteen minutes later, Second 45 pulled in and the skipper stormed into the office. Their engine had stopped right in front of the telegraph office. This, as it turned out later, could almost be called an act of Providence.

I don't recall this man's name. He was huge and tough, newly promoted from braking and, as I remember him, quite stuck on himself. I heard Ardmore OS the extra out while the conductor was reading his orders.

As soon as he had gotten the sense of those orders the brakeman let out a roar: "What the blinkety-blank hell is going on here, kid?"

"Why, whatsa matter?" I asked.

"Whatsa matter? Matter a plenty! First 45 didn't get this second order and I saw his markers going out of sight when we pulled in!"

Before he finished I realized what had happened. Dependable old McCracken had forgotten to come back for the order!

I visualized a head-on collision near Orello, but I didn't get panicky. What to do? Catch First 45! Nothing else for it! Every second of time was golden. While I tore off copies of the order and jammed them into my pocket, I yelled to the conductor to cut off his engine. Grabbing my coat and cap, I rushed out into the storm with him. Soon we were in the cab, with the engine freed from the train.

The runner grumbled something about "ham operators," but he lost no time in giving that old girl everything he could give her. We all realized what we had to do, and so we worked together, plenty fast. It was just another case of railroad cooperating like well-oiled machinery to overcome a tough situation.

In a few seconds we were tearing through the blizzard in a chase after First 45. There was nothing westbound behind us between Alliance and Crawford; I was sure of that. Besides, we were protected by our own train on the main line at Crawford. Our chief interest right now was to spot the rear of First 45 ahead of us. Snow was coming down hard now. Fortunately, on account of the extreme cold, it was frozen in fine particles, so the visibility was not too bad. We were sure we could distinguish the markers on a caboose ahead. So on we raced.

Those old coal burners of forty-three years ago were not the smooth machines of today, nor did we have 131-pound rail under us. That engine tore around curves and over bad spots, it seemed to me, faster and faster, in a wild, careening manner. I was grimly hanging onto something, I don't know what, with a wrestler's grip.

ROARING of the locomotive and the storm together made it impossible for us to do much talking on the engine, but the eagle-eye told me afterward that he figured the speed of First 45 at 35 miles and that if he could make 50 we could catch them before they passed Orello. Although the storm seemed to be growing worse and the blowing clouds of snow harder to see through, we caught sight of

First 45's markers about five miles west of Crawford. Our engineer then opened his whistle up wide.

Finally got them stopped, and we pulled up to about fifty feet from their caboose. McCracken came walking back through the snow and was he a shame-faced O.R.C.!

"This is a nice mess, ain't it?" he said. "I sure let this boy down and it's the first time I've ever done such a thing. I'm sorry, kid, but don't you worry; I think this can be fixed up. As soon as I heard that tied-down whistle and saw your headlight, I realized what I'd done."

He turned to the conductor of Second 45, a fellow who'd once been a brakeman for McCracken. "Listen, boy, when you get back to Crawford, turn in your delay for a hotbox, engine trouble or something like that."

To me he said: "You just OS the two trains to the dispatcher at about the time they should have left. Tell him I'll explain things when I get back to Alliance."

As soon as Mac's engineer had received and read his order, he called for a signal. Mac waved him a highball and they were off to their meet at Orello. Our engine ran slowly and carefully back to Crawford, for by this time the snowdrifts were too deep for safety.

When I returned to the office I felt rather shaky. DS was burning up the wire calling me. My fingers were stiff and numb with the cold, but as soon as I could thaw them out enough to handle the key, I answered.

"Where in hell you been since eleven p.m.?" he fired at me. And was he worried!

I OSed First and Second 45 and added that McCracken said "to charge all delays to hotboxes or engine trouble until he got back to Alliance, when he'd explain just what had happened." I guess the detainer had a hunch as to what it was; anyhow he hushed up.

Mac did just what he thought he could do, had everything squared up in fine shape. The next time he ran through Crawford at night, he came in and squeezed my hand. There may have been a tear in his eye as he said, "You're a darn good kid!" It was the best compliment I've ever had.

Road Foreman

By "MILEPOST" McGUIRE

MY POP is not a fictitious character. He is very much alive and has lived in Moline, Kan., for thirty years. After 54 years of railroading on the Southern Kansas Division of the Santa Fe, his memory for the details of his first few years is as clear as ever.

He began blading engine cinders under cross ties for his father when he was sixteen years old, but stayed only during the summer months. In the winter he contracted cord wood for the merchants of Winfield, Kan., and oldtimers have told me he was the best wood chopper in the County. But Pop never said so. He just said that he had a good partner and they had figured out a system that payed off as long as they stayed with it.

At a section laborer's wage of eleven cents an hour he could show very little profit after he had paid his mother for board and room; yet he could earn the unbelieveable sums of $2.50, and sometimes $3.00, a day cutting wood. On his eighteenth birthday he gave his father $100.00 in gold.

After Dad had worked a few summers on the track, Roadmaster John Maloney offered him the foremanship of a branch line section. The job paid $44.00 per month rain or shine and was permanent—that is, it would last through the winter possibly, if you had no serious misfortune and could do the work expected of a team of big horses. The Management, then as now, expected the impossible; only at that time they got it, or cleaned

"WHAT ARE we waiting for?" yelled the Old Man, as Pop stopped in the middle of the bridge

the slate till they found a man who did it.

Pop moved his family and took charge of a run-down, worn-out streak of rust that had had a string of King Snipes going and coming for several years. The track was rough and the weather bad all winter, while the Roadmaster was the toughest chunk of the Ould Sod ever spawned by the seed of Erin.

Now you can't work track when the roadbed is frozen; yet when it thaws out it settles down out of line and surface faster than it can be restored, and must be protected with slow orders in the interval until repaired. The ability of a track foreman is usually gaged by the avoidance of slow orders on his track, or more surely by his promptness in repairing the bad places and taking up the orders. Dad was swapping his slow orders around like give-away checkers but with the first spring thaw came instructions to "All Foremen" to insert all new ties on hand at once. More than 5,000 new ties had accumulated on that jint Pop inherited, and he began to get special instructions from the Roadmaster—lots of them reading "right now," "immediately," "full explanation," "no excuse," and so forth.

Well, it takes a good man an average time of one hour to insert a new track tie. Eight to ten a day per man or thirty a day from a three man gang is a very fair record. But as the rains continued, the track became rougher and more dangerous. Slow orders were getting more numerous and stayed longer, and in the end Dad couldn't put in any ties at all.

DAY BY DAY this "Bull of the Woods" grew less sarcastic and more caustic. At least every other day he wrote nasty letters about the ties. I've read some of those early epistles and they sizzle with epithets that would make any self-respecting man fighting mad.

Dad was just as Irish as Old Man Maloney and when those two were matched it always ended in a draw. Dad could cuss right along with any barge captain, top sergeant or Irish roadmaster and spot them the first break, for he had plenty of everything it took to hold his own. Furthermore, he was ready and willing to quit any day.

Mom has told us many times that Dad would open the front door every night, throw his dinner bucket right through the house and yell, "Why isn't the trash packed so we can move back to Winfield?" With me crawling up one leg and my brother tugging at the other, he soon had the answer in his arms.

"Just one more day—that's all I'll take," Pop would promise Mother then, while her stock reply was, "I'll never move until you get a better job first."

Dad tried again and again to reason with the Rawhider that in a month or so he could put in the ties and still maintain the track safely. The Old Man contended that since the ties had been on hand for a couple of years, if they weren't inserted

promptly they would have to be reloaded and divided among other gangs. Furthermore he argued that they were needed in the track. This was quite true for rotten ties were the cause of much of the difficulty in maintaining the section.

The weakest part of any track structure has always been those soft pine sticks which not only hold the rails to the correct gage width but also cushion and support the iron in a smooth surface on whatever kind of ballast used. Replacing ties is an endless chore for a section gang. There are 32,000 on ten miles of track, and in early days, when they were not treated against decay and lay on a roadbed of natural muck, ties would last only from three to nine years. From this you can see the necessity of not neglecting that part of the work.

Pop had more than 5,000 ties piled up on that section which should have been inserted in previous years. The other foremen of the road had only a few or none, and were protected against bad gage and spread track by having ties ordered for repairs. Dad had no excuse as there was a surplus of ties on hand.

Finally he received the answer to all his problems. It came by wire: "Insert all your ties at once or resign!" Dad was happy when he got home that night and showed the message to Mom. He was going over to the Missouri Pacific. He would start farming, he would take up the carpenter trade, he had saved some money and everything was rosy.

However there was one fly in the new ointment. Mom insisted that she wouldn't move until he located something better. While he explained and expounded, raved and ranted, cussed and discussed for hours, Mom's sole reply was, "Get another job first."

But Dad meant business. He broke up part of the furniture so it wouldn't have to be packed and threw out most of the dishes. Mother never raised her voice or tried to interfere with his ideas of packing. She merely repeated that the woodcutting season was over, she wouldn't move until he got a better job, there was no other work in that little place and probably none in Winfield.

Dad was really Lord and Master of that two-room shack. He ruled his family with an iron hand, that is, all but Mother. She never questioned his judgment except on moving, and she moved only four times during her life. Then she traveled at the company's suggestion, never because Dad just wanted it so.

Pop was strict with us kids: he never permitted brawling or bawling, and to make sure we were quiet and well-behaved he'd tell us stories or sing to us for hours every evening. That night though he told stories only to Mom, but good ones. He explained things forty different ways, yet all she would say was, "Why don't you put in the ties?"

ALONG toward morning Dad gave in. "All right, I'll show the Sichnsich I can put them in, and then I'll quit!"

The ties went in before the end of the month. The old ones weren't tunneled out or the new ones put in according to the standard plan, but the job was completed. In no time at all, the old ties disposed of.

Now Pop was really ready to quit.

"Furnish 5,000 new ties at once. Track in bad condition," he wired. Knowing the ties couldn't be furnished, he wanted to needle the Roadmaster. He got what he expected, for in a few days the Old Man showed up for a handcar inspection of the section.

The Rawhider could be exasperatingly silent at times. He hardly spoke until he came to a long ditch on the right-of-way. "Stop the car," Maloney ordered, getting out he searched the length of ditch, behind the cuts, in the brush along the fills and everywhere else that a few new ties might have been hidden or burned.

As they went over the Arkansas River bridge, Dad stopped the back-breaker in the middle.

"And what are we waiting here for?" yelled the Old Man.

"Just thought you'd want to look around," Pop taunted.

Nothing was said about the ties and Dad didn't quit. However, it looked like he would get fired some months later when he had a bad derailment which was laid to unsound ties.

This time Dad really wanted to leave, but he certainly didn't want a discharge against his record. He fumed and fussed blaming Mom for having kept him there till he got fired. She only smiled. "Why didn't you order more ties?" she asked.

When the Brass Collars came down with the axe to close the file on the wreck, Dad showed them his copy of the message requesting ties. He not only kept the job but got hundreds of new ties. In fact, he got enough to tie up the entire section, something very unusual then or now.

Things went so smoothly that he didn't think of quitting for about a week at a time. However, as far back as I can remember, he has spent every Sunday afternoon searching advertisements of "Farms For Sale." After fifty years of hunting he finally bought one and struck oil on it! Now he wishes he'd quit years ago.

As soon as Pop finished tieing up that ten-mile mudhole, he was assigned to another orphan at the opposite end of the division. Immediately he blew up as only a son of the Emerald Isle can blow his top. Is it any wonder that I told my Sunday School teacher, "Take the dod dam thumb of which, I quit?" Similar expressions still cause me no end of embarrassment, when I am trying to teach a class of matronly women.

Dad refused to go to the new job and Mom wouldn't move anywhere else. He sent in his resignation and I have the Roadmaster's answer in front of me as I write. It begins: "C. C. McGuire, Esq. You will have to accept the bitter with the sweet if you want to work for me. If you continue to do your best there may be something good for you someday. Let me know when you'll take charge of Section 4-H. Yours resp. John Maloney."

POP WAS SMART. He figured if he took the new job he'd get Mom to move where he could get other work, so we moved. Mom rented the biggest house in town, called "The Castle." She bought new furnishings and added a daughter to Pop's responsibilities. Of course, he had to work until he could pay the bills.

His track was subject to overflow and there was no overtime pay in those days. Every time it rained he resigned. He wanted to try other jobs; but in a couple of years he was assigned to the largest yard on the division and went deeper in debt when Mom refused to vacate a rented house. Finally he bought the place for $850.00, paying for it from wages of $65.00 per month. We moved just once more: when Pop was made Roadmaster at Moline, Kansas. This is where I was made a Boss Gandy on a branch line section where there hadn't had a tie inserted for seven years. They had 3,500 ties on hand, some of which had lain in piles so long they were rotten. When I put them in the track without being urged, the Superintendent sent his congratulations by writing, "Your timebooks show poor accounting for ties inserted as you didn't allow one hour per tie. You show as many as 80 ties per day inserted with 3 men which of course is due to careless reporting of time and material."

This Brass Collar thought that one new tie per rail was ample for any track. As soon as he found out I had put in four and seven, he almost fired me. The next summer I laid new rail on the section and other extra gang foreman surfaced and finished tieing it up. I was then the proud possessor of a section without a rotten tie in it. But my joy was short-lived. The sections on the branch were lengthened out and I was bumped off before I had finished the rail-laying job.

I tied up a main-line section then including a big yard. This time I was rewarded for doing the impossible with a time check. Now I'm back on a twenty-mile branch line section; once again I can say, "There isn't a rotten tie in my track."

A short time ago, the foreman on a neighboring section was fired because of bad ties at a point of derailment. It was contended that he hadn't ordered sufficient

Locomotive of the Month: Virginian Freight Motor

ORDER for the most powerful electric locomotives in the world has just been announced by the Virginian Railway, which will receive four of these machines from General Electric's Erie, Pa., plant during 1946. Each will consist of two units, with an aggregate weight of a million pounds, all of which will be placed upon driving axles.

Eleven thousand volt alternating current, leached from existing catenary wires extending between Mullens, W. Va., and Roanoke, Va., will feed two 4,000 horsepower motor-generator sets housed in the cab structures of each locomotive. These, in turn, deliver power to sixteen traction motors geared to as many driving axles. Based on a factor of adhesion of twenty-six percent, the big jacks will exert a starting tractive effort of 260,000 pounds, while continuous pull at the drawbar, at 15.75 miles per hour, is estimated as 162,000 pounds. Such power, applied to Virginian grades in electrified territory, will be sufficient to maintain existing schedules with 10,000 ton coal trains. Top speed is in the neighborhood of fifty miles per hour.

In terms of horsepower, each two-unit motor will have a top rating of 8,000, with 6,800 available continuously at the rails. Other characteristics of the GE giants follow:

Specifications

Overall Length	143 feet 2 inches
Maximum Width	11 feet 1 inch
Maximum Height	16 feet
Driving Axles	16 feet
Diameter of Wheels	42 inches
Weight, Engine	10,000,000 pounds
Tractive Effort	
Maximum	260,000
Continuous	162,000
Maximum Speed	50 miles per hour
Sand Capacity	104 cubic feet
Lubricating Oil	10 gallons

ties for all of his track. The succeeding foreman inserted 437 new ties on the curve where an engine turned over.

YOU CAN'T maintain a railroad without cross ties, and four or five rotten ones together makes a dangerous condition; yet that is where economy on a railroad always begins. An I.C.C. report on the Salina Northern before it was taken over by the Santa Fe states, "The railroad is practically abandoned; four out of five ties are rotten or broken."

The I.C.C. may not know it, but a lot of fast traffic is being wheeled over "practically abandoned" main-line trackage judging by their own definition. However, the treated ties in use now are spike-killed before they rot out. This is caused by the movement of the rails and spikes vertically as wheels pass over a tie.

On an adjacent section, I've seen some 1902 ties, and quite a few of 1908 vintage. Meanwhile, most of the first World War ties have been removed because of the poor substitutes used for creosote when treating them.

For my most recent splurge of ambition, I was privileged to entertain the Tie-Inspectors for a week. They sawed, photographed, hacked, tested and inspected the old ties removed from the track. One admitted that termites were doing considerable damage; the other couldn't believe his own eyes. While the first thought the ties examined had served out their usefulness, his companion argued that a rotten tie between two good ones was a fair standard of maintenance. Their final report must have been fair-to-middlin', as I never heard any criticism.

Until 1930, section men in the United States inserted an average of 80 million new track ties per year, and relayed an average of 2 million tons of steel rails. In that year, the figure on ties was cut 50 percent and 25 percent reduction made in replacement of rails.

An authority stated in 1940: "There remains a deficiency of 3 million tons of rails and 90 million ties to put the tracks in first class condition. It is a certainty there are even greater deficiencies in other maintenance-of-way items because rails and ties are given preference." Yet since 1940, tie renewals have never reached 49 million mark and the figure on new rails has never reached 2 million tons in spite of the immense increase in tonnage hauled. However, the old alibi of giving the section boss a time check anytime the structure falls apart is still the standard practice of many so-called Class I railroads.

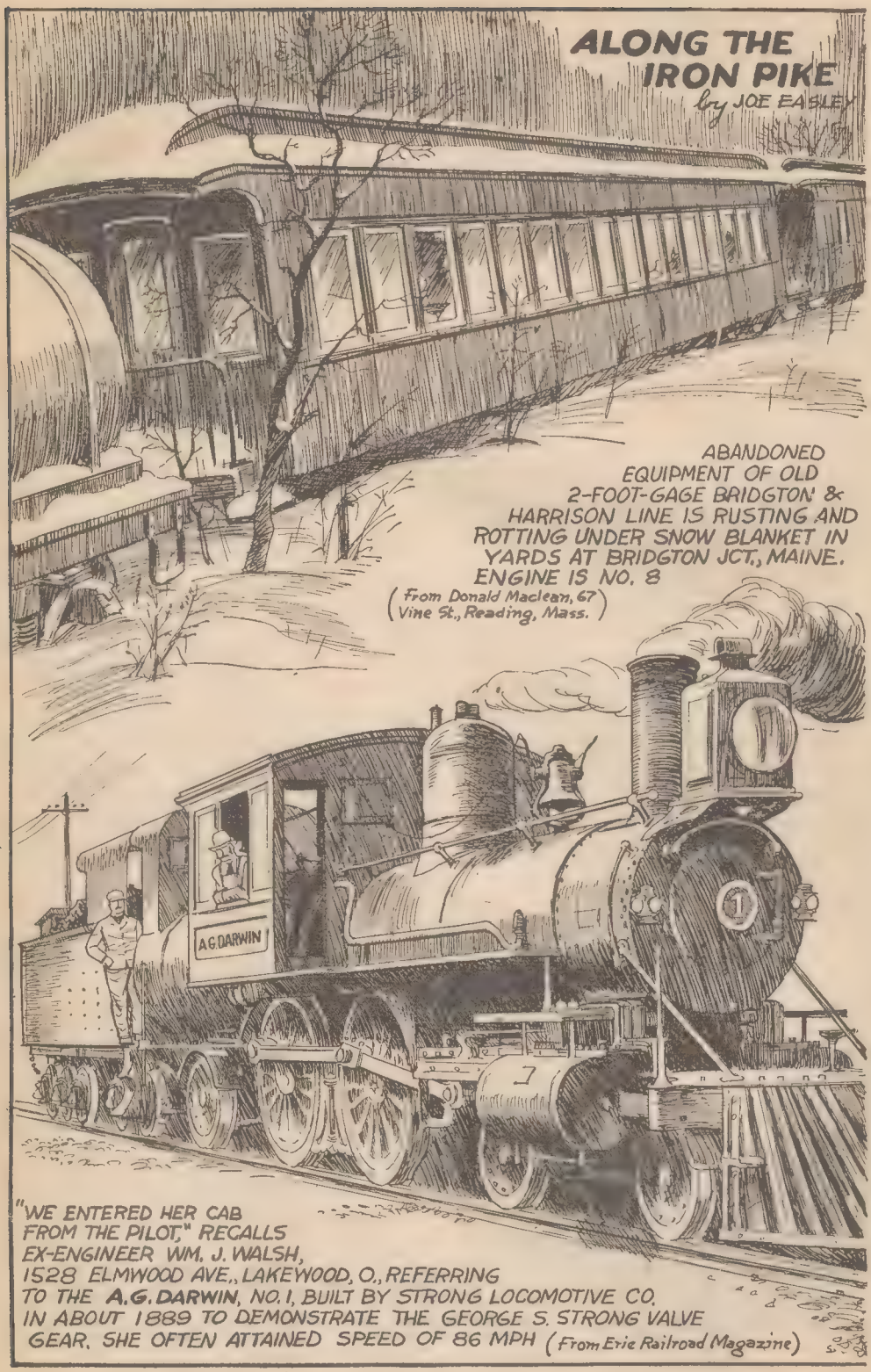
Economy or economic difficulties on a railroad generally begin and end in the maintenance-of-way department. The labor-bound section gangs never get a break. When labor and materials were cheap and plentiful, money was said to be scarce. Now that money is plentiful, labor and materials are scarce and the result is all the same difference.

But the Boss Gandy has finally found a friend in the Railroad Labor Board. Quoting from a case where a Foreman was recently reinstated with pay for time lost, we read: "This Section Foreman has been under the direction of 4 Superintendents, 5 Division Engineers, and 4 Roadmasters, each in his turn attempting to handle his assignment just a little more economically than his predecessor and here we have the result. This is not the first derailment which has occurred as the result of the lowering of the standards of track maintenance for which the section foreman has been held responsible when the conditions were beyond his control. Until the Management steps up the standard of track maintenance to keep pace with the heavier power and faster train schedules, accidents of this nature may be expected. The remedy will not be found in the discharging of the section foreman who is unfortunate enough to be in charge at the time."

I'll bet some of those 4-5-4 busted right out of their padded cells when they heard that broadcast. The others probably butted the Pearly Gates right off their hinges, and let a few old geed-up King Snipes slip in for a belated share of Glory.

ALONG THE IRON PIKE

by JOE EASLEY



ABANDONED EQUIPMENT OF OLD 2-FOOT-GAGE BRIDGTON & HARRISON LINE IS RUSTING AND ROTTING UNDER SNOW BLANKET IN YARDS AT BRIDGTON JCT., MAINE. ENGINE IS NO. 8 (From Donald Maclean, 67 Vine St., Reading, Mass.)

"WE ENTERED HER CAB FROM THE PILOT," RECALLS EX-ENGINEER WM. J. WALSH, 1528 ELMWOOD AVE., LAKEWOOD, O., REFERRING TO THE **A.G. DARWIN**, NO. 1, BUILT BY STRONG LOCOMOTIVE CO. IN ABOUT 1889 TO DEMONSTRATE THE GEORGE S. STRONG VALVE GEAR. SHE OFTEN ATTAINED SPEED OF 86 MPH (From Erie Railroad Magazine)

BOXCAR SERVES SANTA FE AS GLENDORA, CALIF., DEPOT UNTIL COMPLETION OF NEW SPANISH STUCCO BUILDING. HOMER G. THOMPSON IS STATIONMASTER
(From LeRoy Palmer, UP operator, Ontario, Calif.)

TASTES GOOD ON COLD DAY. MRS. MARJORIE GARRISON, NEW HAVEN GATE-TENDER, REGULARLY SERVES HOT COFFEE FREE TO ENGINE CREWS STOPPING BESIDE HER CROSSING SHACK IN HINGHAM, MASS.
(From Brotherhood Maintenance of Way Employees Journal)

THE DIXIELAND, caught by the camera of S. D. Warner, Danville, Ill.

On *the* Spot

RECORD for tunnels in this country belongs to the Western Pacific, which has 33 tunnels in 100 miles of Feather River Canyon, while the old Cincinnati Southern averaged only 18 for 100 miles, according to H. B. Doyle, boomer veteran of 20 roads, who began on the Wabash in 1895, retired from the WP in 1941, and is now living at 7435 Halliday Ave., Oakland 3, Calif.

Doyle's comment follows an editorial note in our Oct. '45 issue. The author of "Caboose Chaplain" had stated that a certain stretch of Iranian State Railways was called the "Subway Division" because it had 133 tunnels in a distance of 133 miles. We pointed out that our Jan. '39 issue carried an illustrated feature, "The Rat-Hole Division," based on the fact that the old CS had 27 tunnels in 150-odd miles between Wilmore, Ky., and Harriman, Tenn.

Ken Lightburn, director of the Rio Grande News Bureau, tells us that the Moffat Route now has 29 tunnels in the 50 miles between Denver, Colo., and the Moffat Tunnel's east portal, 3 tunnels having been abandoned with the old "over the hill" line when the Moffat Tunnel was built. There are 24 tunnels in the first 35 miles from Denver, although another bore begins right at Milepost 35.

* * *

WHO can explain this anomaly? S. F. Brandt, Norris, Tenn., writes: "While on a recent trip to Chicago I saw an engine running in reverse, pulling a lone Pullman and a Soo Line caboose. Wording on the tender indicated the locomotive belonged to the Baltimore & Ohio Chicago Terminal road, a B&O sub-

sidiary; but a conspicuous sign above the cylinder bore the words *Alton Railroad.* This odd assemblage was running on tracks of the Rock Island's Blue Island suburban line, a section over which the B&O has trackage rights. However, B&O outbound trains operate over the Rock Island's inbound tracks, and *vice versa.* Inasmuch as the outfit was parading down the Rock Island's outbound track, I suppose it was actually inbound. The whole set-up was puzzling."

Two oddities are reported by Switchman Tal Morehead, 920 E. 10th St., Tucson, Ariz., as follows: When the Southern Pacific train *Argonaut* left Tucson recently the last car was a Pullman appropriately named *Lascar.* Another SP train, No. 44, went out the same day with engine 4444.

* * *

"ATWOOD'S FOLLY." As we go to press, several readers report that equipment of the Bridgton & Harrison has been retrieved from the Bridgton Jct. yards, where it has lain rotting since 1941 (*Iron Pike,* p. 80). Purchased then by Ellis D. Atwood, South Carver, Mass., the 2-foot-gage pike has been carted 180 miles to its owner's backyard—1800 acres, including cranberry bogs.

Enough track has been laid to accommodate all rolling stock, but no more. However, before next year six or more miles will be laid. Employes have dubbed it the "Cranberry Branch RR", but Atwood intends to call it "Bridgton & Saco River," original banner of its equipment. He hopes to use his so-called *Folly* to service his bogs, and preserve the names of Maine's now extinct narrow-gage roads.

* * *

According to Atwood's plans, the road will soon pay for itself. It will be used for sanding, spraying and harvesting the bogs for New England's largest cranberry grower. Besides, owning this fulfills a lifetime dream of its purchaser.

"Person-Oddity," Universal Pictures

Pullman Conductor Allen

HOBBY of Pullman conductor Richard Allen is repairing clocks, mostly of the wake-you-up-early variety, on a non-profit basis. If you take two broken clocks to his Portland, Ore., shop, he'll give you one in good running order. During the war, with the aid of school children, he collected more than 500 old timepieces, fixed them, and presented them to USO canteens and boys in the armed forces. Trust a railroad man to realize the value of time.

* * *

CREDIT for clear shot of the first NYO&W Diesel pulling into Middletown, N. Y. *(Locomotive of the Month, Sept.)* is due to De Forrest Diver of Middletown.

* * *

YOUNGEST engine dispatcher? John Mitchell of St. Louis says he has a 19-year-old friend Bill Jones, Jr., who is a third-trick engine dispatcher on the Missouri Pacific. Bill's father is chief clerk to Master Mechanic Joseph M. Whalen at St. Louis.

* * *

DE-STREAMLINING. Shortly after the beginning of World War II, reports Pfc. Sam Appleby, Hq. Det., Sec.

Photo by Wm. H. Hallenbeck, 450 Allen St., Hudson, N. Y.

PAY DIRT. New York Central shovel takes a 5½-cubic-yard bite of limestone from quarry at Hudson, N. Y., where three 170- to 200-ton diggers haul out revenue rock daily

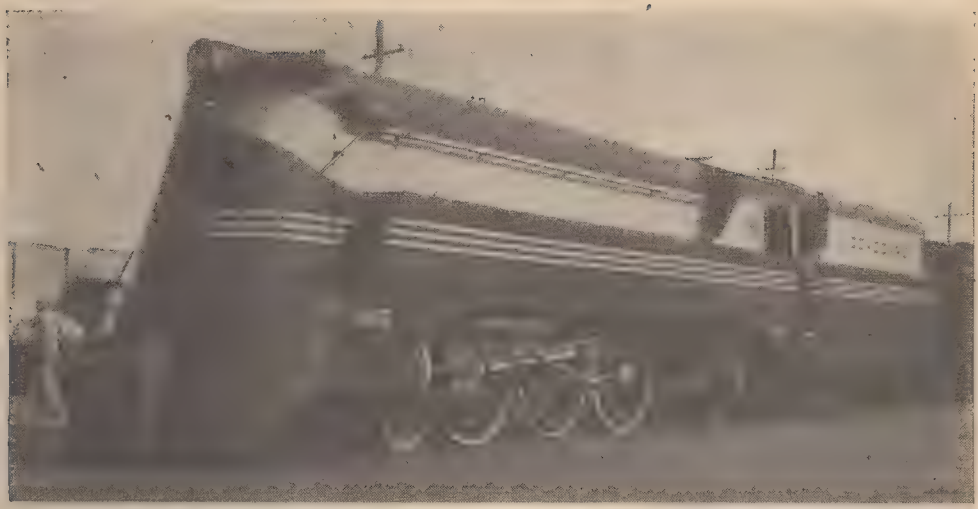


Photo by George W. Pettengill

POSTWAR de-streamlining on the Seaboard resulted in stripping colored hoods from Nos. 865, 867 and 868, which formerly drew *West Coast Silver Meteors*

1, Ft. Jackson, S.C., the Seaboard removed brightly colored shrouds from three of its Class P Pacifics, 865, 867 and 868. These three had been used on the *West Coast Silver Meteors* between Wildwood and St. Petersburg, Fla. They were painted yellow, orange and brown and pulled 5- or 6-car trains consisting of Pullmans, diner, buffet lounge and two coaches. The present *West Coast Meteor* has two Diesels and 12 cars.

Incidentally, the Seaboard has just completed CTC installation covering 236 miles of main line. Also recently installed on the Seaboard is an automatic block system between Monroe, N.C., and Atlanta, Ga., a distance of 272 miles of secondary main line over which run the *Cotton States Special* and the *Robert E. Lee.*

* * *

MYSTERY veils the discovery by six railroad men of $663 in bills at the east end of the old Colorado Midland Railroad bridge over Monument Creek near Colorado Springs. Our news comes from Robert Davidson, Box 42, Rock City Falls, N.Y., who adds that the money consisted of $1, $5 and $10 bills wrapped in blank paper placed in a paper sack covered by newspapers. It was found between timbers near the bridge foundations, where the men were making repairs, but there was no clue to indicate who had placed it there. Maybe a miser, maybe a robber—nobody seems to know.

* * *

THANKSGIVING DAY, 1911, is one date that W. E. Holland, 431 Nordale Ave., Dayton 10, Ohio, never will forget. Mr. Holland, now 81, is not as spry as he was in 1887 when he began a long rail career on the left side of the cab. Writing to Maxwell Swan, author of *Wanderlust,* he swaps experiences on the old St. Paul Road (now CMStP&P).

"In 1911 I landed at Cle Elum, Wash., with a bunch of signal men to help install automatic signals there," he reminisces. "Among my varied duties was buying supplies for camp. Two days before Thanksgiving the foreman, who was located about three miles down a mountain side from Boylston, asked me to procure food for the holiday feast.

"Said he: 'Take the three-wheel speeder to Ellensburg, buy all the supplies on the cook's list, and charge 'em to our account. Then load on the baggage car, come back by the night train, and unload at camp.'

"Well, I arrived at Ellensburg okay

and bought the grub, but instead of returning that night I stayed in town to see a show. The telegraph operator let me store all the stuff, including the speeder, in his office. Next morning at sunrise I set my car back on the rails, heaped it full of Thanksgiving grub, and began what turned out to be a long and toilsome journey back to camp. The rail was so frosty that I couldn't make headway. I had to push the darned thing.

"About 10 a.m. I reached Kittitas. There a signal maintainer with a railcar tried to pull me over the mountain, but no luck. I began pushing my speeder up the 11 miles of elevation. If you think that was fun, try it yourself some time. A short way up from Kittitas I saw a train climbing the grade, so with a switch key I let myself in on a spur. Then I continued on my way. Over to the southwest I could see the snow-capped Mt. Rainier, more than 4500 feet high, nearly 90 miles distant. It was a superb view. Later, I came to that very high trestle, on which you, Mr. Swan, had so enjoyable a time flagging. How well I remember that trestle! When I got to it, a train was coming, so I quickly unloaded my supplies and the speeder.

"At length I returned to camp with the grub, but was bawled out for not coming back on the night train. I sure earned the Thanksgiving dinner."

WEST JERSEY passenger station at Millville, N. J. in 1875; Engine No. 9, *at right*

TWIN HOGGERS. We believe that Chester Eugene Lord of Worcester, Mass., and his brother Charles Elmer Lord, B&M engineers with a total seniority of 111 years, are the nation's only twins handling locomotives on one road. Last Sept. 14 they became 74 and, as was their usual practice, took the day off to have dinner together. With their daily runs, both local freight, far apart, they rarely see each other except on birthdays.

The twins were born at Oakdale, Mass., in 1871. Charles went firing at 18, Chester a year later. The former was promoted in 1897, the latter in '98. Charles is senior engineman on the Southern District of the New Hampshire Division, running between Worcester and Ayer. His brother, second on the Fitchburg Division engineers' roster, runs on the Watertown branch.

Both men are widowers. Charles has 3 sons and 4 grandchildren. One son fought in World War I, another in World War II. Chester is childless.

* * *

ILLITERATE section boss on the Oregon-Washington RR. & Navigation at Durkee, Ore., wrote a letter to his roadmaster, back in 1911, that a recent true tale by "Milepost" McGuire recalled to the mind of J. L. Watson, 1016 W. 53rd St., Los Angeles 37, Calif.

"The section boss, Vitto Colono, was

Photo by Granville Thomas, Millville

Photo by Richard E. Prince, Jr., 1141 Larchmont Crescent, Norfolk, Va.

CLEARING the Atlanta yards, L&N ***Southland*** powered by 4-8-2 No. 402 heads for Cincinnati on a through run to Chicago

a half-pint Italian," Watson tells us. "Colono could almost have passed for a circus midget. He was so short that when he helped to pump the hand-car enroute to or from work, the handles at topmost position almost lifted him off his feet. One day Colono received a pay check that, according to his calculations, was several dollars short. Hot under the collar, he wrote what he considered a wrathful letter, penned very laboriously, and put the the check in the envelope with it. Before mailing, he proudly showed me the message. It read: 'I git mi chek today. I send back to compane.' That was all the explanation he offered. The check really went back to the company. It never returned to him, nor was any inquiry made as to why he had sent it in. For about three months Colono sweated and fumed, then finally decided it was a total loss."

* * *

CASEY JONES'S fireman, Sim Webb, not only survived unhurt the wreck near Vaughan, Miss., in the dark early morning of April 30th, 1900, when his famous engineer was killed, but had "another and even more miraculous escape" in 1919, which caused him to quit the engine cab for good. Now 70, Sim is still living at Memphis, Tenn., engaged in odd jobs as a bricklayer and dreaming of his crowded years on the rail. His life

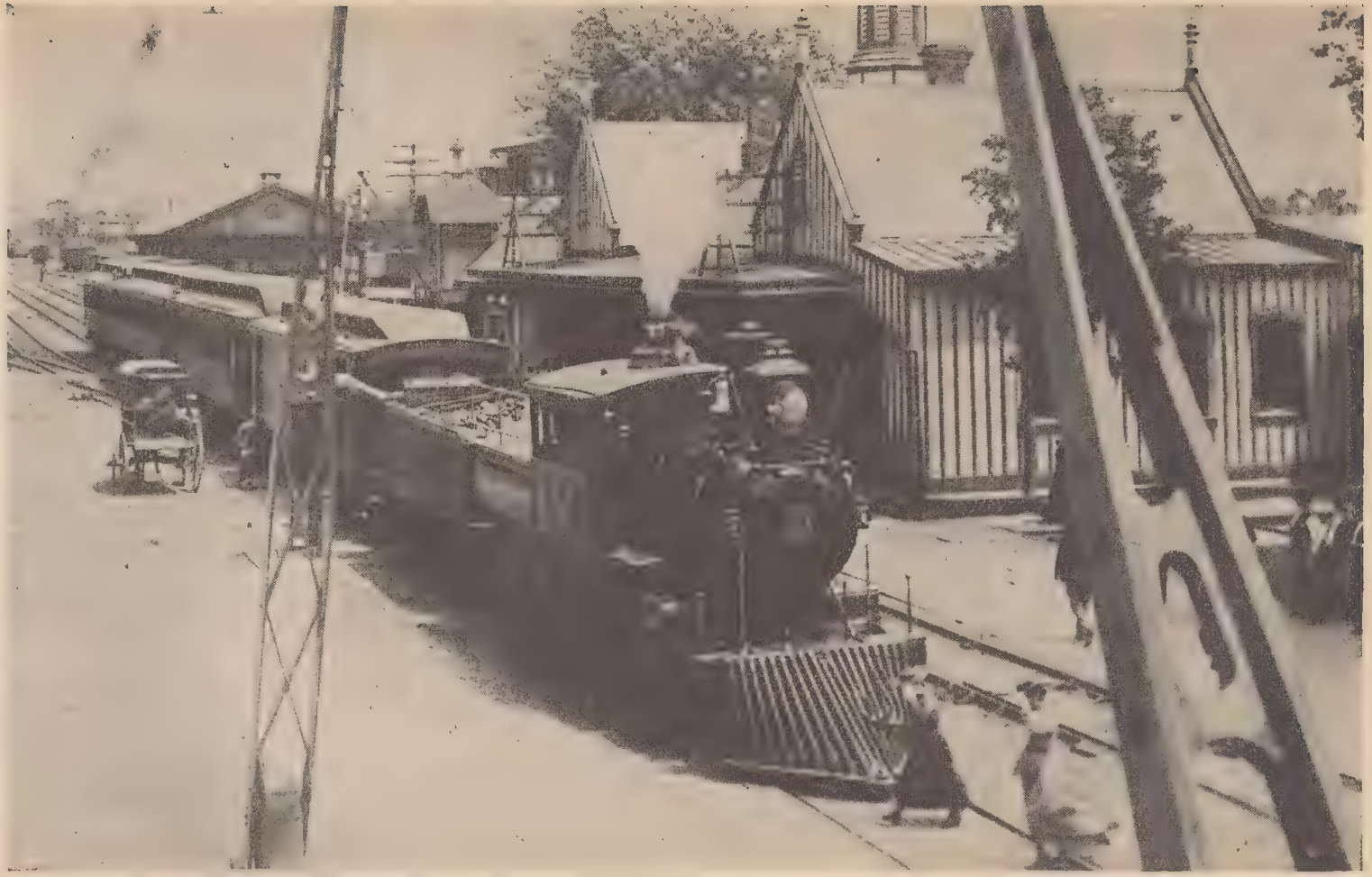


Photo by L. G. Harpel, Lebanon, Pa.

LEBANON, PA.: Philadelphia & Reading station half a century ago, five years before new depot was built

story, including a first-hand account of Casey's last run, forms one of 25 colorful chapters in a new book by Eldon Roark, *Memphis Bragabouts: Amazing Characters I Have Met,* 224 pages, illustrated, $2.50, published by Whittlesey House, McGraw-Hill Book Co., Inc., New York City. Mr. Roark, a Memphis newspaper man, has written for *Railroad Magazine* and other periodicals, but this is his first book.

* * *

FLOOD of 1913 washed out Pennsy bridge at Loudonville (not Lucas), Ohio, writes Paul W. Tilley, Santa Fe mudhop, 101009 S. Stanford Ave., Los Angeles 2, Calif., correcting a small error in the first item of our Nov. '45 *Light of the Lantern.* Mr. Tilley has a son-in-law living at Loudonville. He adds: "A friend of ours nearly lost his life in taking a picture of the destruction of that bridge. I have the photo among other flood views."

* * *

FATHER-SON teams interest T. L. Foster, UP dispatcher, Las Vegas, Nev., who says he believes the UP's Los Angeles Division wins the prize for being family-operated. He cites the following:

G. W. Taylor and son-in-law, D. F. Wenger, are assistant superintendents at Los Angeles and Las Vegas respectively. Asst. Chief Dispatcher V. G. Ham is Wenger's brother-in-law.

But that isn't all. Dispatcher Walter McCall has a son and a son-in-law working as dispatchers in the same office, and two other relatives, one an engineer, the other a conductor.

Take also the case of Dispatcher A. W. Hicks, whose father and brother are conductors.

"There are many other teams of fathers, sons and brothers employed on that division," Mr. Foster adds, "but why go on? Most of us are kinfolks in the good old desert."

Now listen to L. G. Berthelot, Canadian National transportation operator at Campbellton, New Brunswick: "Our dispatching office here has a man and two sons, all regularly assigned trick dispatchers: Eben Spencer, age 47; Tom, 26, and Joe, 24."

* * *

ERIE'S EMBLEM. Following publication of our article last month on the part played by the late William J. Davies, Erie agent at West Orange, N.J., in designing his company's trademark, George C. Frank, Assistant to President, sends an additional clue:

Jay Gould

"President Robert E. Woodruff of this road has recently come into possession of a small, round, brass knob that reputedly was used on the business car of Jay Gould, Erie president from 1868 to 1872. This knob has on its face an Erie diamond exactly as it appears today, except that instead of the word *Erie* appears simply a letter *E*. Inclusion of the full word *Erie* seems to be a natural evolution from the original design."

Apropos of the initial *E,* Freeman H. Hubbard's new book, *Railroad Avenue,* states: ". . . the Erie Railroad maintained general offices above an opera house at 23d Street and 8th Avenue, New York. This historic building still stands; but the opera house has been converted into a motion picture theater, and the only trace of former Erie occupancy I have been able to find is the elaborately carved huge teakwood door, containing the initials *E R* on the 23d Street side."

* * *

MILLION-DOLLAR MULLIGAN. In boomer days, an unemployed switchman or brakeman who was broke was not too proud to stop in at a hobo *jungle* (camp) to eat, sleep, wash up, or

Photo by John Tolley, Mt. Vernon, N. Y.

TREE-LINED tracks of Mt. Beacon Incline Ry., seen from ascending car. Line curves off before reaching halfway mark

merely stick around between trains. Such a character was Charles B. Chrysler, an old-timer now living at 1120 S. Grand Ave., Los Angeles, Calif. Looking back through the years, Charley recalls a certain time when he, a dirty, hungry boomer, wandered into a jungle some distance from the rail center of San Bernardino. We'll let him tell us what happened, in his own words:

"Howzit for camping and cutting in on the mulligan?" says I.

Mulligan, in case you don't know, is hobo stew. It consists of *hoppins* (any and all vegetables that can be bought, begged, borrowed, or stolen), together with meat acquired the same way, or maybe *gumps* (chickens) or other fowl, the whole savory mess cooked outdoors.

My question was answered by the camp bully, a big carrot-topped boomer of philosophical bent, who liked to hear himself talk. They called him "Rhode Island Red."

"The camp belongs to God almighty," says Red, "and if you're all right with Him you're all right with us. There's plenty of timber, straw, moss, water, fire, and plenty of alky (alcoholic liquor). But mulligan—well, that's something else again. The law of compensation says you can't take something out unless you put something in. I didn't make the law—it was made by the camp—I enforce it. You can stay here as long as you like; but if you want to eat, you'll have to hustle some hoppins. Unless you're a Johnnie Newcomer you know this as well as I do."

As I said, the guy liked to chew the rag, so I listened.

"All right, all right," he says. "You're hungry. Well, I'm gonna show you how you can eat. See that tar kettle there? It holds about a barrel of anything you want to put into it. Right now it contains hot water, but tonight I'm taking a detail of men out to fill it. Now, here's the layout . . ."

Red explained there was a carload of live chickens on a sidetrack by the depot in town. All kinds. Big ones, tall ones, fat ones, Plymouth Rocks, Leghorns—all in crates. A whole express car full. A score of volunteers would sneak out of the jungle at night, go down to the depot, and grab as many of the crates as they could get away with. Some crates had only a pair of chickens in them; others had six or eight. The plan was for each man to pick out a crate containing a large number of chickens.

"If you fail," Red warned, "don't come back to the jungle and expect to eat. If your conscience bothers you, you needn't trail along."

So that night twenty or so unshaven stalwarts disappeared in the darkness toward San Bernardino. A war council was held in the underbrush. Red spoke up again.

Photo by Clarence R. Weaver, 15 N. 2nd St., Sunbury, Pa.

HIGH-WHEELED Reading 4-6-2 with No. 5 on Pennsylvania tracks at Sunbury, Pa., after *Williamsporter* wreck in 1936

"Two of you men go down the track a few blocks, pick up some dry leaves and straw, place them in an empty boxcar, and set them afire. Then return here. When it's smoking good, you, Dutch, run over to the depot and tell the agent there's a boxcar burning down the track. When they leave the station to put out the fire, the rest of us go into action. It's every bozo for himself. Grab a crate, take to the brush, and hike for camp."

There were two men in the station and both of them ran over to the smoking car. The denizens of the hobo camp moved with trained precision. Each grabbed a pen of squawking chickens, four men lugging the big containers, one or two lugging each of the small ones.

The raiders solemnly toted the crates down to the river bank near the jungle and there they held sacrificial rites. Then they dumped the slaughtered fowl back into the crates, took them to the campfire, and scalded them in the tar kettle. One squad neatly picked off the feathers, another degutted and cut up the poultry, a third buried the feathers and refuse. Each job was handled efficiently. After that, all hands went back to the stream and washed up in cold water. Finally, after

BEFORE THE DAYS of air brakes. Burlington engine Number 70 with her runner, Martin Squires, and fireman

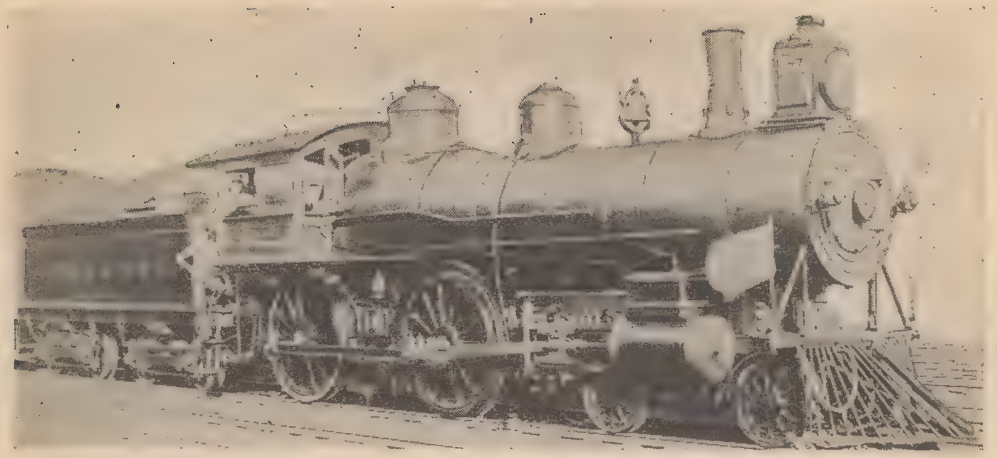


Photo by J. Wm. Barnes, Southbridge, Mass.

OUTSHOPPED by Baldwin in 1888, New Haven 147 was rebuilt 13 years later, at which time larger cylinders and drivers were applied

cleaning the kettle, we plopped the chickens into the great pot. Then we broke up the crates to feed the roaring flames.

By that time the midnight prowling detail had returned with paper bags full of cabbage, potatoes, onions, chili peppers, tomatoes and parsley. Somebody even brought along a bag of salt. At two in the morning our mulligan started to simmer. By sunrise it was prime. And we were famished! Bowls and spoons mysteriously appeared and we dug in.

The stew lasted us three days. Tramps for miles around heard of the feast and drifted into camp. They tried to wheedle us into sharing with them, but only those who brought along dessert for the gang or other food to vary our diet were permitted to do more than sniff the mulligan.

Meanwhile, there was hell to pay at San Bernardino. It seems that a lot of pedigreed chickens had been stolen from an express car. The loss was terrific. Those fowl had been the result of years of scientific breeding and had been exhibited all over California. In fact, at the time of the theft, they had been awaiting shipment to the Los Angeles County Fair at Pomona, where they were expected to win medal cups, blue ribbons and cash prizes in addition to the long list of awards they already held. These haughty birds were rare breeding stock. But by the time railroad bulls reached our camp there was no trace of them, and most of the men had scattered.

Even today, if you chance to visit hobo jungles on the West Coast, you are likely to hear men around campfires tell about the "Million-Dollar Mulligan," as it was called. Many a wandering brother will claim that he was either a night yardmaster at Pocatello or else was "in on" the greatest stew of all time. But Rhode Island Red, "Circus" Doyle, "Fish-Mouth" Ferguson and other famous boomers—if they are still living—will tell you there were less than 25 men in that raid, and Charley Chrysler was one of them.

* * *

CORNFIELD MEET on the NP in 1902 at Reeds Point, Mont., as described by Frederick G. Fletcher in his true tale, "Safety Measure" *(Nov. '45)*, strikes a familiar chord in the memory of H. E. Waggoner, W. 104 17th Ave., Spokane, Wash.

"At that time," says Waggoner, "I was NP agent at Homestake, Mont., and I remember the wreck well. Old-timers also recall the hold-ups of trains No. 2 at Bearmouth and 6 on Butte Mountain.

Photo by Julian A. Strong, 18570 Henry St., Melvindale, Mich.

MAN AT WORK. Hand on throttle, Wabash Engineer Grover McMillin gets ready to ease No. 89 out of Detroit for night freight run to Montpelier, Ohio

between Butte and Homestake. When No. 6 arrived at Homestake the express car's top was blown off and the sides badly wrecked. Engineer McArthur, who ran the helper that night, came into Homestake with his face a mass of blood from glass broken by a robber's bullet. We found the bullet in his coat which was hung in the cab just behind him. Close call, eh?

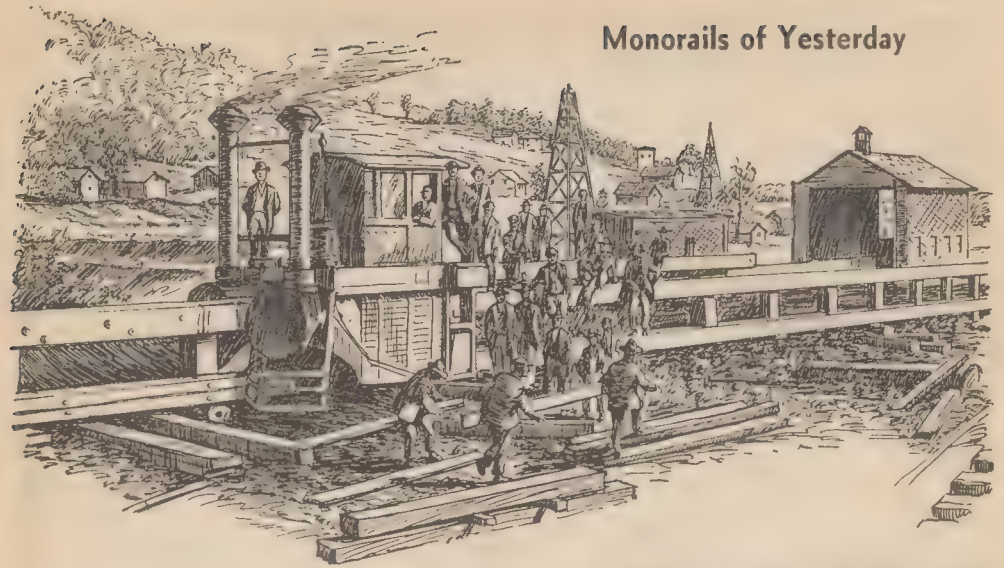
"I wonder if Fletcher was op at Homestake pit the time a car of booze was derailed at Lewis spur? Or when a string of cars loaded with cordwood got away at Lewis spur, careened down to Pipestone, were derailed and burned up. A coach on the train was fortunately empty. We lost no time getting switches lined up for the Whitehall branch, but the runaway never reached there."

Waggoner retired in 1943 after 52 years of railroading—14 as agent and op on many roads and 38 in GN train service. In July, 1901, he left the employ of the StLK&NW (now Burlington). He wants to hear from anyone who was then working on that road.

Another old-timer who recalls the head-on collision in 1902 is W. W. Berry of Missoula, Mont.

"I was then running a Northern Pacific passenger train and was the ORC griever (representative) for the Montana Division," he writes. "Therefore, I handled the Mike Kelly case as a grievance. I wish to correct Mr. Fletcher in some

Monorails of Yesterday



Sketch from photo by Granville Thomas

CONSTRUCTION of Bradford & Foster Brook Ry., dubbed "Peg Leg" in 1878. Road was wrecked by experimental engine one year later

CASUALTY after less than twelve months' existence, City Island Monorail Electric in New York fell when overhead support gave way

minor details. Train No. 4 was in charge of Condr. Harry Markus and Engr. Charles DeGroat, while Cond. Kelly and Billy Vaupel ran No. 7.

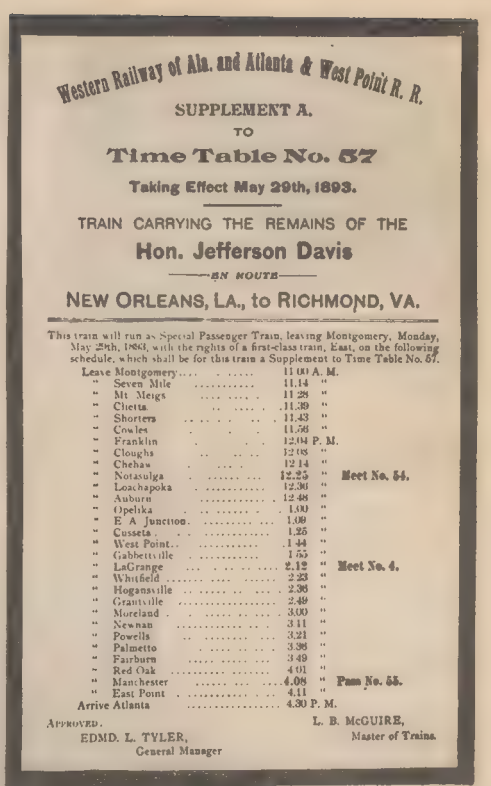
"The timecard meet between No. 4 and No. 7 was Rapids, a blind siding halfway between Columbus and Park City and seven miles east of Columbus. No. 4 had 18 minutes on the timecard between Columbus and Rapids, all down hill. The operator at Park City had been excused by the dispatcher in order that he might fiddle for a dance. Kelly and Vaupel claimed to have left Park City 6 minutes late, with 15 minutes left to make the 6-mile run to Rapids for No. 4, which was ample time with the train they had.

"A special rule on the time card read, 'Eastbound trains will take siding when meeting westbound trains of the same or superior class' This crazy rule put No. 4 in the siding for No. 7 wherever met and gave No. 7 the main line to the west switch at Rapids on the made meet. Under the rule, No. 4 was also required to wait at Rapids 5 minutes beyond its leaving time for possible variation of watches. Old-timers remember that rule.

"The trains collided one mile east of Rapids, the mail clerk on No. 7 being killed and many persons injured. Five minutes after the collision Kelly compared watches with two traveling men, both of whom testified that No. 4 was not due at Rapids when the wreck occurred. That Kelly had known what he was doing was indicated by the fact that he had instructed his head brakeman to ride the Park City to Rapids in order to save time in handling the entering switch.

"In defending Kelly, I claimed that God only knew or would say that No. 4 had passed Rapids ahead of time. The evidence pointed strongly in the affirmative, and I still think this was what they did. The rule providing that eastward trains take siding for westward trains of the same class was one reason for this collision or partly so. The rule was rescinded at the next time card issue. The second faulty operation was to allow a passenger train to make its own meet. No. 7 being on time, the dispatcher should have made the meet by train order. Both Kelly and Vaupel were discharged, although in my opinion innocent."

* * *



Western Railway of Ala. and Atlanta & West Point R. R.

SUPPLEMENT A.
TO
Time Table No. 57
Taking Effect May 29th, 1893.

TRAIN CARRYING THE REMAINS OF THE
Hon. Jefferson Davis
—EN ROUTE—
NEW ORLEANS, LA., to RICHMOND, VA.

This train will run as Special Passenger Train, leaving Montgomery, Monday, May 29th, 1893, with the rights of a first-class train, East, on the following schedule, which shall be for this train a Supplement to Time Table No. 57.

Leave Montgomery		11.01 A. M.	
" Seven Mile		11.14 "	
" Mt. Meigs		11.28 "	
" Chetta		11.39 "	
" Shorters		11.43 "	
" Cowles		11.56 "	
" Franklin		12.04 P. M.	
" Cloughs		12.08 "	
" Chehaw		12.14 "	
" Notasulga		12.25 "	Meet No. 54.
" Loachapoka		12.36 "	
" Auburn		12.48 "	
" Opelika		1.00 "	
" E A Junction		1.09 "	
" Cusseta		1.25 "	
" West Point		1.44 "	
" Gabbettsville		1.55 "	
" LaGrange		2.12 "	Meet No. 4.
" Whitfield		2.23 "	
" Hogansville		2.36 "	
" Grantsville		2.49 "	
" Moreland		3.00 "	
" Newnan		3.11 "	
" Powells		3.21 "	
" Palmetto		3.36 "	
" Fairburn		3.49 "	
" Red Oak		4.01 "	
" Manchester		4.08 "	Pass No. 55.
" East Point		4.11 "	
Arrive Atlanta		4.30 P. M.	

APPROVED.
EDMD. L. TYLER, General Manager
L. B. McGUIRE, Master of Trains.

From M. J. Meeks, Box 510, Sanford, Fla.

SPECIAL timetable for funeral train carrying body of "Jeff" Davis—President of Confederate States during Civil War —to Richmond, Va. for burial

SILVER ENGINE. Our picture and write-up of the *America,* the Rock Island's famed silver-plated and silver-trimmed locomotive that had won the highest honors in the Paris International Exposition of 1876, brought joy to Orie C. Ramsay, 214 W. 7th St., Hutchinson, Kan.

"In 1886, when I was seven years old," he recalls, "we lived on the west side of Wichita, Kan., just where the Missouri Pacific forked. The north branch cut through my father's land beside a fine peach tree. When the peaches were ripe

Photo by Don Cameron, 50 Hewitt Ave., Toronto 3, Canada

DOUBLE-HEADED Canadian National freight pounds across upper bridge at Belleville, Ont.

Photo by Bob Nicholls, 483 Cottage Ave., Glen Ellyn, Ind.

SCHENECTADY ATLANTIC 1097 makes a commuting stop at Chicago & North Western Glen Ellyn depot

I would shin up this tree, fill a paper bag with the delicious fruit, tie it on a stout stick, and lay in wait for a passing freight. As the train jogged by I would extend the stick to the crew and they were glad to accept my gift.

"One day my father said: 'Son, get on the fence about noon tomorrow and see if you can hand a peach to the new train that'll come by.'

"At the appointed time I perched myself on the fence with a bag of peaches and waited. Soon I heard a new sound, a beautiful chime bell and a whistle that did not sound like any MoP hog I was familiar with, and before I knew it, a gorgeous locomotive flashed by in the sunlight, covered with silver from stack to running gear. I was so taken back that I almost fell off the fence and completely forgot about the peaches. Of course, I watched her till she was out of sight.

"That night when my father came home he told me the story of the Silver Engine, the same facts that were printed in the Nov. '45 issue of *Railroad Magazine*. In those days the *America* pulled the Rock Island pay car running on MoP track to Hutchinson and connecting there with the Rock Island. My father 'Wooley' Ramsey died in 1930 after 35 years with the Missouri Pacific."

IRELAND is far from a railfans' paradise, reports Arthur P. Hughes, Green Gates, Ballylickey, Bantry, County Cork, Eire.

"There aren't many railfans in this country," he writes. "Railways here are few and far between and, aside from the very few main lines, are in a much-neglected condition. Until recently, service was limited to four passenger and four freight trains a week on all lines, except on a few suburban routes around Dublin; but there are now six Irish passenger trains per week and four freights on all lines, in addition to suburbans."

Arthur is 29 years old. "I've been a railfan all my life," he continues, "having acquired the hobby in England, where my uncle was a chief divisional clerk on the Great Western. I've also had two model layouts, though indoor space where I now live only permits me to dream of what I one day again hope to possess.

"Much that was picturesque about Irish railways has disappeared with the closing of narrow-gage lines. Even as recently as the summer of 1944 there was a 3-foot-gage line with link-and-pin couplings in County Cork running between the villages of Skibereen and Schull. A trip

over this 13-mile pike was something never to be forgotten. It was like stepping into the past century. Shortage of coal caused its abandonment. Though rails and rolling stock have not been removed, it seems unlikely that a journey over this line will ever again be possible.

"All forms of transport in Eire are now in the hands of a newly-formed Government-sponsored monopoly, the Irish Transport Co., whose professed policy is to substitute bus and truck for trains wherever possible. The time may not be far distant when railways here become almost extinct. A gloomy prospect indeed! You can understand how I appreciate receiving *Railroad Magazine* in this anti-railway land.

"Would like to correspond with railroad men and fans in U.S. and Canada, those interested in railroads, interurbans or street-cars. My special hobby is collecting railroad timetables and street-car tickets, tokens, and transfers. Having lost my collection as a result of the war, I'd be grateful for help in making a fresh start. I haven't much to offer in exchange except street-car and bus tickets of Eire and street-car tickets of two English towns.

"I am also willing to buy any English rail book or magazine and swap it with someone in North America for a similar-priced work on railroads or street-cars, or back issues of *Model Railroader,* or an *Official Guide,* in clean condition. On request I will airmail a list of available English rail books, showing prices, etc., together with my own requirements."

Arthur could also send Irish postage stamps or scenic postcards in trade for items he wants. He himself does not save stamps or postcards.

* * *

PETER JOSSERAND, train dispatcher in the Feather River Canyon, is resigning from the WP to become editor of *The Train Dispatcher* magazine, 10 E. Huron St., Chicago 11, Ill., upon retirement of the present editor. Pete has achieved a wide reputation as an author from nearly eight years of writing occasional fact articles, true tales and train-order problems for *Railroad Magazine,* and is well fitted for the new job.

* * *

TWO NAMES. There is a small village in Ohio on the Clover Leaf Railroad called Jonestown, the post office name of which is Tokio, reports Clifford Haigh, Box 342, Van Wert, O. It is about 12 miles west of Delphos and 5 miles east of Ohio City. In that case, which would you follow, the *Official Guide of the Railways* or the *Postal Guide?*

* * *

MONAHAN'S CAT. After reading our article on J. B. King *(Nov. '45),* F. W. Parsons of San Gabriel, Calif., sent us a sketch showing the rear of an animal described as "Monahan's cat," which he said was often scrawled on railroad equipment many years ago and, in fact, was as popular as "J. B. King." Does any other old-timer recall it?

* * *

LAST STOP is the Reader's Choice Coupon *(page 145),* which guides your editorial crew in selecting material for future issues of *Railroad Magazine.*

Some readers use the coupon. Others prefer not to clip the magazine; they send home-made coupons, postcards or letters. Regardless of how votes are written, all count the same. Results of balloting on the November issue show these titles listed in order of popularity:

1. True Tales of the Rails
2. State-Owned Railroad, *Monroe*
3. Electric Lines, *Maguire*
4. Light of the Lantern
5. On the Spot
6. Whistle on the Levee, *Dellinger*
7. Sabotage, *Sloman*
8. Coast to Coast, *Kirkpatrick*
9. Along the Iron Pike, *Easley*
10. The Rocking Chair, *Mills*

Most popular photos: 131, 16, 28-29, 138, tie 94, 100 and 122-123.

ROGERS LOCOMOTIVE WORKS

WHEN a young Connecticut carpenter named Tom Rogers set up a little pattern-making shop near the falls of the Passaic River, in 1816, neither he nor anyone else supposed that Paterson, New Jersey, would one day become the "City of Iron Horses", those strange new contraptions that were just then beginning to claim the attention of a handful of crackpot inventors, abroad. Still less likely seemed the thought that Rogers, himself, would be the father of the city's industry.

OLD wrought iron weathervane, which for years pivoted above the shop on Spruce Street

Yet by 1832 car wheels and axles were in modest demand and the firm of Rogers, Ketchum & Grosvenor found itself engaged in filling such orders. Then a contract came to assemble a complete locomotive imported from England. The die was cast. From that day on until the plant was sold to Alco in 1904 the name of *Rogers* was synonomous with fine and famous engines.

ROGERS LOCOMOTIVE WORKS, as it looked in its heyday. Original plant, built in 1835, stood at the corner of Market and Spruce Streets (right rear corner of block in foreground). Cupola-topped wing was added in '71. New erecting shop of 1901 stood at the end of Market Street

FIRM of Rogers, Ketchum & Grosvenor occupied old "Jefferson Works." Two raceways providing water power are at the right with the high embankment of the Morris Canal behind them

FIRST locomotive built by Rogers was the "Sandusky", delivered to the Mad River & Lake Erie Railroad in 1837. She had outside eccentrics counterbalanced driving wheels and spark-arresting netting on her stack

OLD erecting shop on Spruce Street. The weathervane appears on the chimney top

BELOW: Unlike his father, Jacob S. Rogers was no craftsman. But he managed the plant astutely after Thomas Rogers' death

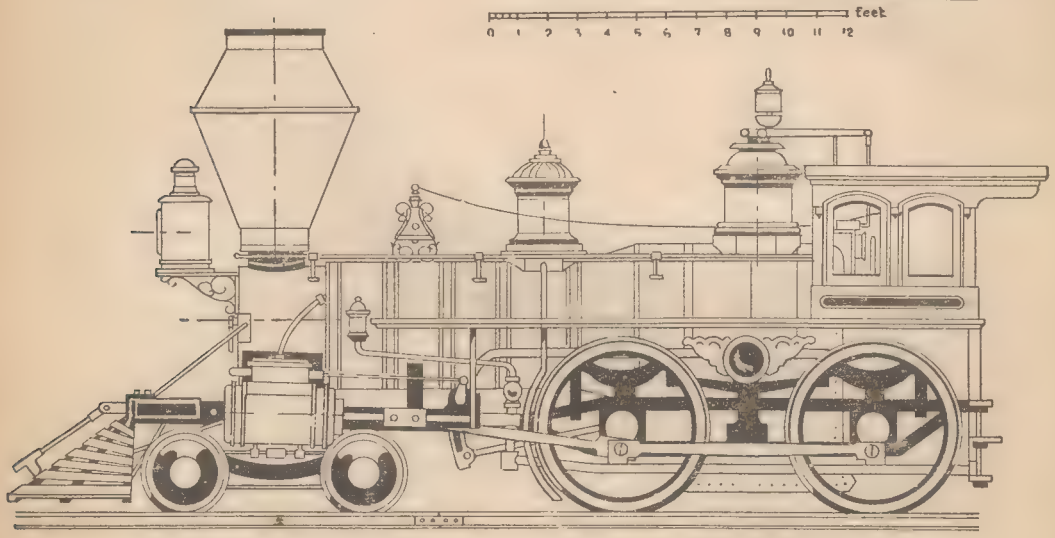
ROGERS ENGINE of '51 had characteristic twin steam domes

INTERIOR of the new erecting shop (1904)

TEXAS & PACIFIC Number 265, enroute to the Erie Station in 1900, via tracks of the Paterson Horse Railroad Co. This was the last locomotive to be hauled along Market Street

NAME PLATE can still be seen above the door of the old erecting shop. The building has been rented, in recent years, to various garment manufacturers

HIGH-SPEED PASSENGER ENGINE of the

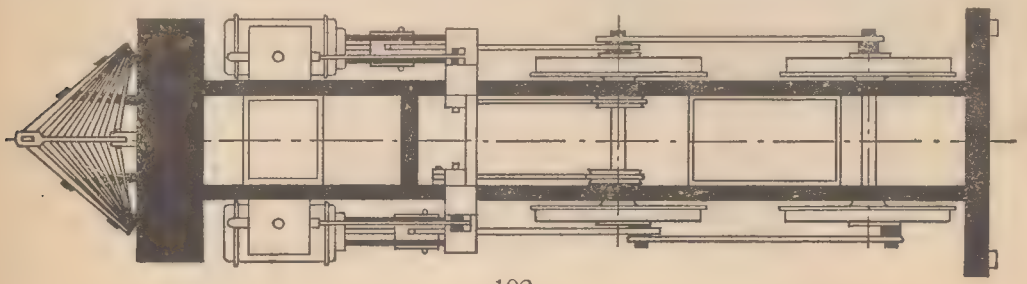


HBC.

CHAMPIONS of O-Gage railroad systems have worked up a convincing case for old-time engines and equipment. If you don't believe it, bend an ear to one of them. With the sharp perception of a Jay Gould or Daniel Drew he will point out the blessings of obsolescent day coaches and locomotives—limited wheelbase; no overhang on curves; short trains; long runs; the illusion of great distances created by light-rail single track and narrow sleepers.

"Besides all this," he will conclude, "we make increased use of color. Yellow coaches; walnut-finished cabs; brass ornamentation; American-red pilots and headlight boxes; lush-green tenders, trimmed and lettered in gold. The result is an eye-arresting quality far superior to that achieved by today's biggest freight hogs."

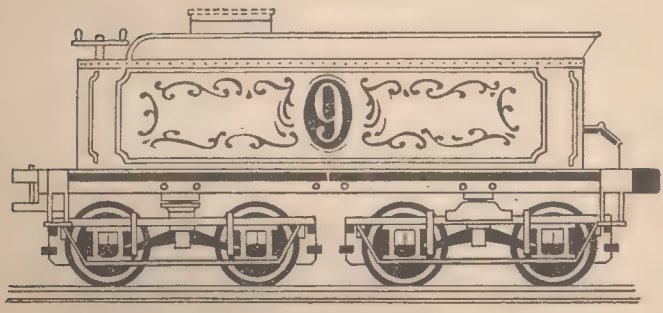
Okay! We of the flea-circus scale contingent will not remind the big-time railroad operator that he brushed aside most

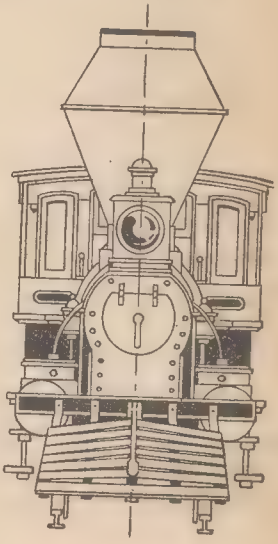


ROGERS LOCOMOTIVE WORKS

OO GAGE

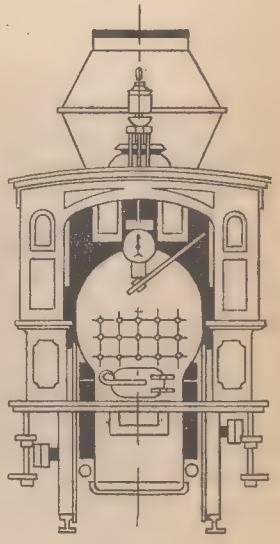
Here's a Model Which Has Everything: Limited Wheelbase, Distinctive Outline, Rich Ornamentation, Historical Appeal

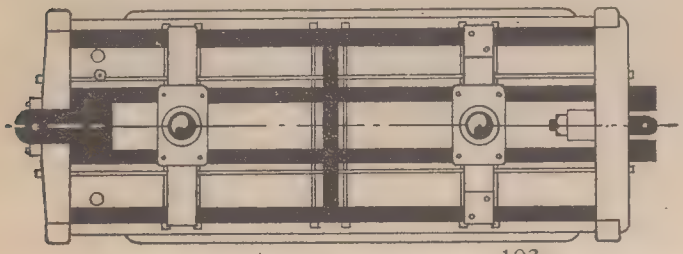




of these advantages as irrelevant and immaterial when we cited them to justify our choice of "S" gage, OO, or HO. Instead, we will accept his word for it, only mumbling that diamond-stackers are equally at home upon our lilliputian pikes, where it takes six water stops to get an old-time train across a ping-pong table.

The little engine pictured on these pages gives a hint of possibilities in the small-gage field. Drawn to Double-O standards it measures a scant eight-and-three quarters inches from drawhead to deadwoods. Couple up two flat-roofed coaches and the total train-spread will be less than the over-all length of one O-gage Pullman!





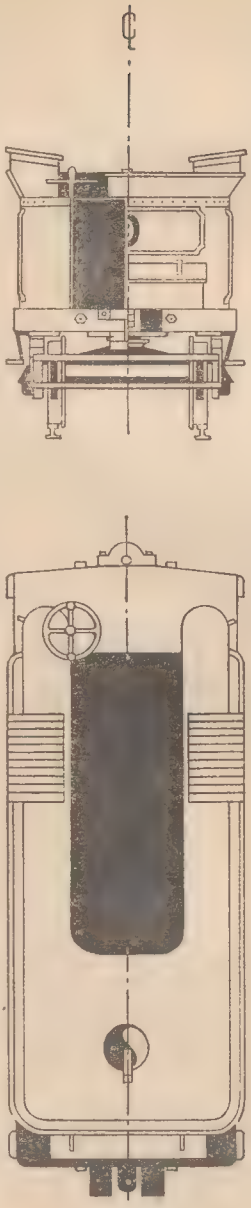
By the NUT-SPLITTER

In preparing the drawings of our 1863 Rogers eight-wheeler, no attempt has been made to indicate a motor installation or the form of drive. However, the usual procedure is to place a small permanent-field motor in the tender, concealing the upper portion beneath a dummy fuel pile. The particular locomotive shown here was advertised by the builder as a coal burner, but short lengths of "cordwood," glued to a removable motor cap, increase the model's novelty value, and, incidentally, save you the inconvenience of arguing the general public out of its belief that all balloon-and diamond-stacked engines were hay-burners.

The drive to the gear box on the locomotive must, of course, be flexible, to allow angling between the tender and the engine bed. Rigid shafts with a universal joint interposed between them will do the trick, or you can use a light coil spring. Apply power to the forward axle through a bearing box reduction of around 30 to 1. (Bear in mind that a little kettle of this kind takes on a ludicrous appearance if it skitters along at too fast a clip.)

Now let's have a look at the cylinders. They are slightly inclined and each has four crosshead guides supported at the rear by a bracket which extends across the frame. This same bracket incorporates bearings for the rocker mechanisms which move the valve stems.

Due to the small size of the model, no attempt has been made to indicate full-working Stephenson gear. Instead, the links are reproduced only to the extent that they serve as levers, attached to the opposite ends of the rocker arm shafts.



Tank Elevations

Motion is derived from two cams mounted on the main driving axle, one on either side of the worm gear. These cams are nothing more than quarter-inch discs, with a half-round groove cut in the circumference of each, and having axle holes drilled through them just off center. A wire loop passes completely around each groove and is extended forward from the splice to a pivot-joint with the bottom of the "link."

The side-elevation drawing shows a tubular extension projecting back from the crosshead to a point just ahead of the sand pipe. On the actual engine this was the cylinder of a water pump operated by a piston-rod extension. The course of the feedline can be traced forward from the tender to this pump, then on to the boiler check-valve above the crosshead. The arrangement is duplicated on the opposite side of the engine.

Note that in contrast to modern locomotives, the side rods are placed *outside* the main rods. The drivers have twelve full-length spokes apiece, and each of the four wheels carries a single wedge-shaped counterbalance bolted between two adjacent spokes at a point directly opposite the crank pin.

One of our drawings indicates the timber and truss-rod construction of the tender underframe, as viewed from below. Here you will see that chafing plates are placed at the outer ends of the rear bolster, only, where they contact bearing blocks applied to the second truck. The effect of this is to give the tender tank three-point suspension—the center bearing of the forward truck supplying the other area of support.

Finishing the model may be as elaborate a process as your painting and lettering skill will allow. Assuming that you have turned the cylinders and steam- and sand-domes from brass, and used wire of the same material for handrails and brackets, they should be polished and covered with clear laquer. Otherwise, use gold enamel paint. The boiler simulates Russia iron (blue gray), while flat black is applied to the stack, smokebox and engine frames. Wheel rims and tires are silver or light gray; the pilot, headlight, leading wheel centers, and driving wheel spokes—a bright American Red.

Generally the cab and tender were the same color. This might be green, red, or natural wood (a matching paint shade in the case of the metal tender). Personally I have always been partial to a commonly used tint just off of cream, warmed by a very small amount of raw sienna. The gold striping which complements red or green would not, of course, show to good advantage against so light a background and it was customary to substitute red or brown for such decorations. Tender trucks, regardless of the color used upon the tank, were red and black, with silver journal-box lids.

Coming Next Month: Plans for an 1863 Day Coach and Mail Car

Photo from the Railroadians of America

Forty-Eight Years of Rail Photography

—are encompassed by these two photos. Above: The Erie's crack ***Vestibule Limited*** speeds through Paterson, N. J., enroute to Chicago in 1897. Below: Experimental Baldwin road Diesel passes the same spot, in 1945, with No. 1, the ***Erie Limited***

NINETY-EIGHT-YEAR-OLD Starucca Viaduct still carries main line Erie traffic safely on its broad, stone-ballasted back

1853 GUIDEBOOK pictured Starucca's eighteen arches, village of Lanesboro and Susquehanna River, (foreground)

The Great Starucca Viaduct

IN A DAY of assembly-line engineering wonders it is refreshing to find, here and there, a product of individual vision and talent which has not outlived its usefulness. Such a monument to James P. Kirkwood is the great Starucca Viaduct, which for ninety-eight years has carried the burden of main-line Erie traffic on the Delaware Division, three miles east of Susquehanna, Pa.

Back in 1848, when the line of the New York & Erie was being pushed across the Randolph Hills toward Binghamton, N. Y., construction engineer Julien Adams was confronted with the problem of carrying the broad-gage over the quarter-mile-long valley of Starucca Creek at an elevation of more than one hundred feet. An earth fill of that size was considered out of the question, yet work on the piers of a stone bridge was so slow and ineffectual that the whole project appeared on the verge of bogging down. Adams finally called in Kirkwood, a civil engineer who had learned his craft in Edinburgh College before immigrating to this country in 1834. Experience gained on surveys for the Long Island Railroad, and actual construction work for the Boston & Maine, convinced the Scot that he could complete Starucca Viaduct on schedule, provided cost was no object. He quickly established stone quarries in the neighboring hills and set eight hundred men to work on the bridge itself. Falsework was in thirteen tiers by the time stone masons set the keystones for its eighteen fifty-foot arches. Breadth of the structure was thirty feet; its length, 1200 feet; and the extreme height from the valley floor, 110 feet. Trains ran safely over the $320,000 structure within a twelve month of the time Kirkwood took over.

Watching today's great cavalcade of freight traffic threading Starucca in perfect safety, it is amusing to recall that when it was first proposed to double-track the viaduct, in the early '60s, fears were expressed and the arches would never be able to stand the strain of two forty-ton locomotives passing over it simultaneously.

"YOU AGAIN!" Jim McElroy snorted. "Don't this Western Central have another crew they could haul my stock out of here with?"

Broken Couplers

Palomino Jim Couldn't See Why His Son Would Pass Up a Good Ranch Just to Go Railroadin'

By E. S. DELLINGER

STREAKS of cold rain were slicing obliquely down through the cone of the oil headlight when Conductor Jess McElroy crossed the main line ahead of the little low-wheeled mountain engine and mounted the platform of his toy waycar standing alone on Track 1. The skipper was an old dour-faced man, thin-waisted and lean-jawed. He smoked a vile corn cob pipe and talked with the soft drawl of a Kentucky mountaineer.

Shaking the water off his yellow slicker, he sauntered into the car. The place was clean as a well-kept kitchen. The floor was carefully swept and the cushions dusted. Delay and wheel reports, switch lists and message blanks were laid out neatly on his desk; cheery fire burned in the coal stove; and the enticing aroma of coffee boiling in the granite pot filled the waycar.

His parlor brakeman was his only nephew, Bud McElroy. As the old man entered, he saw Bud down on his knees in front of a home-made bench pruning the wicks of three signal lanterns. Unlike the uncle, Bud was short, stocky, bow-legged, hot-tempered and full of talk. The youth glanced up and inquired:

"What's the dope for tonight, Unk?"

The skipper took time to run a broom straw through his pipe stem before replying.

"We run light to Big Pine. There we meet three extra freights comin' down the mountain; take on two helper engines, load sixteen cars uh spotted gold an' haul 'em over the hill to Saladin."

Sixteen cars of "spotted gold" were sixteen cars of palomino ponies loading out from his father's ranch far up in a canyon. Bud snapped the lids shut on the lanterns, set the red one beside the rear door, placed the other two on the cupola floor, and rubbed his hands vigorously with a big piece of white waste.

"That's just what I figgered when I seen this crummy settin' here by itself," he griped. "Why in hell can't this knuckle-headed outfit give us a coal drag an' call another crew to handle them damn horses? We've loaded every hoof that's been shipped off that ranch since I come down here three years ago to go railroadin'."

The skipper smiled. "When crews work first in, first out, of a railroad terminal, luck usually decides what trains each crew shall handle."

Bud flung his waste into the stove and kicked the door shut. There was no use trying to get an argument out of Uncle Jess. That easy-going old pencil-pusher reckoned life was too short to spend it condemning other people. Bud read the orders and hooked them under the cupola window. The head brakeman coupled

the engine on, lined the switch and let them out into the main, and they went chuttering away to Big Pine.

While his two young shacks faced each other in the left cab window, chatting of girls and football and trainsmen's rights, the O. R. C. stretched out on the other side, puffing thoughtfully on his ancient cob pipe, and let his mind wander back over the trail of years which he and his brother, Palomino Jim, had trod together.

THERE were boyhood trails through the Kentucky hills when they had dreamed of wealth and fame. There were trails of youth where they had vainly sought for gold on a Western mountain peak and in river gravel. There were manhood trails when Jess went railroading and helped Jim to gain a foothold in the lush green grass of Palomino Valley and dot the slopes with painted ponies.

The first break in their trail had come when Jess had refused his brother's offer to quit the road and join him in the venture which was making him the Palomino King. This break had been soon mended, and life had continued as before, with Jess going up at intervals to fish and hunt and watch Jim's boy grow into manhood.

Misunderstanding had come the night after Bud hired out braking on the mountain run. The recriminations of that night still rankled. Palomino Jim had accused him of enticing the boy away from home to piddle around the damned ol' railroad, and neither his own statement nor that of the trainmaster had convinced him that Bud went to the office alone and started railroading over Jess's protest.

Standing there in the dingy little room in Saladin, Jim had denounced both of them as fools and idiots, and had ordered them never to set foot on the ranch again. Jess was still thinking about that night when the engineer pulled up and stopped in front of the Big Pine office. Before he could slip into his rain togs and get out of the caboose, Palomino Jim came bolting in.

The rancher stood a full head taller than his brakeman son and even topped the six feet and an inch of his lean conductor brother. Jim was ruddy-faced, thick-necked, wide shouldered, and big in the middle. He wore a white Stetson, a yellow slicker over a plaid mackinaw and flannel shirt. His tan breeches were tucked into the tops of a pair of fancy cowboy boots made by a high-priced cobbler in Denver. There were pouches under his eyes which had not appeared four years ago when he and Jess had last hunted deer.

He stopped short when he saw Bud and Jess and knew whose waycar he had entered.

"You again!" he snorted. "Don't this Western Central Railroad have another crew they could haul my stock out of here with?"

"They've got sixteen of 'em, if I can count," his son flashed hotly.

"Well, they'd better get one of 'em up here if they expect to load my stock in their cars! I don't aim to ride this caboose with you tonight, and neither this railroad company nor anybody else can make me."

"You don't have to ride the caboose," Bud retorted quietly. "There'll be sixteen cars of friendly palomino ponies ahead of it when we get loaded. You can crawl into one of them."

Bud's father turned white around

the mouth. "I'm gonna wire that dispatcher to send me another crew, and I won't load a hoof until they do."

JESS had heard enough bickering. He warned his brother in a friendly tone:

"You'd better not, Jim. You may be a big man on Palomino Ranch, but on this pike you're just another customer. Officials run these trains with whatever crews are available, and neither you nor anybody else can change their custom."

The rancher said nothing, and Jess went on: "It's rainin' out there. Your horses are cold and wet. Let's line up the cars and get them into shelter. If you feel the same way about Bud an' me next fall, tell the officials beforehand and they'll furnish you with another crew."

Palomino Jim relaxed. He set his alligator bag on the seat cushion and went away to supervise the loading. The night was growing colder. A sharp wind swept down from the heights. Rain had slackened from a downpour to a wind-blown drizzle. The horses were pawing and whinnying restlessly in the sloppy pens.

Conductor and brakeman went out to check their train. Seven cars were ancient non-air relics without even so much as a pipe beneath them. They had been set out haphazard among the air cars so the crew would have to pull the track and switch them together on the rear end before they could commence loading.

Rules, even then, required that every freight train leaving its initial terminal must have operating air-brakes on at least seventy-five percent of its cars. Nine cars were certainly not seventy-five percent of sixteen; so, before touching them, Jess went into the office and made the dispatcher give him a message to clear his own record in case of accident.

This delay and the switching required a half-hour. It was nearly nine o'clock when they had pulled the string together in the upper end of the stock track. The trainmen cut them off one by one and let them roll down to the chutes. Palomino Jim and his ranch hands separated the herd into carlots and drove them into the slatted cars. It was nearly midnight when they had finished and coupled into the waycar.

Three extra freights had now come down the mountain and gone on into Gunther. The two helper engines were waiting in front of the office ready to couple on and shove them up the hill. At the last minute, the operator handed Jess a message from the dispatcher to take three empty flat cars over to Saladin.

"Tell him I've got a stock train," Jess protested quickly.

The op clicked off the message. Hot wires brought back a reply.

"He says to tell you to pick up them cars and get the hell outa here. The coal drag behind you's got full tonnage."

The brass pounder laughed and so did Jess. The latter picked up the empty flats and put them into his train right ahead of the horses.

THE Western Central was, and still is, a mountain railroad. The single track enters narrow Gunther Gorge a few hundred yards east of Big Pine switch and climb two thousand feet in 11.6 miles. Sixteen loads of horses and three empty flats was three-engine tonnage. Because wrecks had been caused by rear cars breaking off trains and plunging back down the grade before their riders

could get them under control, the brass hats now required one helper engine to be coupled on behind the caboose and used as a pusher to Spruce Grove, where the track came out of the gorge and the grade eased off to less than two percent.

That's the way they arranged their power—two little engines pulling ahead, one shoving behind the caboose. Bud made a pot of fresh coffee, swilled a cup of it himself, and started out to ride the tops. Jess called him back.

"No use decoratin' here tonight," he said. "Ride the doghouse into Spruce Grove. If we break in two we'll both hit the tops and tie them down."

Bud crawled into the cupola, laid a brake club in the seat beside him, and set his lantern between his feet. They had all come in wet and chilly from the loading. Palomino Jim was sitting on the bunk with his chin up, staring at a picture of a strip-tease girl on the wall behind the stove. Jess poured two cups of coffee. He thought Jim was going to refuse this beverage, but the tall rancher reconsidered.

He took the proffered cup stiffly and drained it, and Jess gave him a refill. They finished with Java and lit their pipes. Outside, the staccato beat of the exhaust kept time to the clack of wheels and the creak and strain of timbers. Smoke grew thick in the waycar, and the two estranged brothers squinted at each other through the fog.

Jess wondered if now wouldn't be a good time to patch up the old quarrel. He ventured a cautious comment about Bud's being a whizz at looking after the hind end of a train. The ranch-owner got up, knocked the dottle out of his pipe onto the corner of the stove, and stood with his back to it. Jess went on to say that Bud would probably be promoted to conductor by next fall.

"Conductor, hell!" Jim exploded. "He could have been a millionaire by the time he's forty if he'd had sense enough to stay home and help me run the ranch."

"Bud didn't want to be a millionaire," Jess murmured softly. "Bud wanted to be a railroad man. Yuh see, Jim, there has to be conductors and brakemen same as cowpokes and ranchers. Guys like you couldn't get rich raisin' horses in the Rocky Mountains an' sellin' 'em in Chicago if yuh didn't have men to run your trains. An they have to be good men, too, Jim. Men like that boy, Bud."

"Well, I can't see where that justifies you in wheedlin' him away from home an' bringin' him out here to waste his life rawhidin' around your damned ol' railroad."

"I didn't wheedle him, Jim. Nobody did. He'd been with you out to Kaysee and Denver a few times when he was a kid. He'd seen a few trains an' heard the whistles talkin' to each other in the night. He wanted to live an' work around 'em."

They argued for five miles, but they didn't quarrel—Jess saw to that. The rancher said he couldn't understand why any boy would waste his life riding herd on trains.

"I can't understand it, either, Jim," the conductor admitted, "but there's something about railroads that draws you like a magnet. The work is hard an' dirty. We never know when we start out on a trip whether we'll walk back on our feet or be carried home in a cracker box, still there's some force keeps us goin' on and on. I don't know what it is, but I can feel it."

PALOMINO JIM filled his pipe with fresh tobacco and passed the pouch to Jess. The conductor filled his and they lit both of them on the same match.

"There's lots of things in this life I don't understand," the old skipper continued, voicing the philosophy which he had built up for himself during many a lonely vigil in the cupola. "Who knows, for instance, why you prefer to stay on a ranch raisin' horses while Bud an' me live in town an' work on a railroad? Who knows why we're all three here tonight together? Who knows why it was our turn to pick up your stock an' haul it into Saladin? There was sixteen other crews in Gunther. Any one of 'em might just as well have caught the turn. Why didn't they?"

Jim couldn't answer. The conductor lapsed into silence and the two men finished their pipes. Jim pulled off his fancy boots and lay down on the bunk. He was soon sound asleep. After covering him with one of Bud's blankets, Jess joined his brakeman in the cupola. They watched their train as it wound slowly around the curves climbing toward the Great Divide.

The reek of rain-soaked horses came down from the cars. At their backs the pusher engine kept up her incessant *whamm-whamm-whamm*, which changed at intervals to a blatant roar as the wheels slipped and spun idly on the slippery rail.

Before they had climbed out to the canyon's rim, the drizzle had changed to a soft wet snow spattering against the windows. When they emerged from the gorge and stopped at

"Easy does it" when you use
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It cuts down shaving cost and time!
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Spruce Grove, the dark green trees were transformed into cones of feathery white and the ground was completely covered.

Spruce Grove had a telegraph office, a water tank, a coal chute and a wye; storage tracks lay at the western verge of the parkland which hung like a saddle over the backbone of the continent. The tracks came up to it on a grade of nearly four percent, levelled off for three hundred feet, and climbed the remaining six miles to the crest on a grade of less than two.

Their train being well under two-engine tonnage for the remaining climb, the pusher cut off and returned to Big Pine to help the coal drag which had followed them out of Gunther. The other two locomotives took coal and water. Jess went into the office. His nephew set the brakes on the caboose and three stock cars and inspected his train. Palomino Jim did not go out to see about his ponies. He had been dead to the world when they had pulled in and stopped. He turned over, drew the blanket more closely about his shoulders, and went on pounding his ear.

The skipper didn't stand around the office that night swapping wisdom with the equally lean and good-natured brass pounder. Like many other railroaders, he believed in hunches. An inner voice had been talking to him all the way up the hill, telling him that he was hauling too many non-air cars and warning him to keep both eyes on them. Jess knew, of course, that Bud was looking after them in siding and that even if they should break away on the line, two men with clubs could easily control them. Still, he didn't want to stay too long out of the waycar.

He came out and stood in the snow on the board platform with the big, soft flakes wetting his face. He peered ahead. Torches flared on the ground beside the feet of two little engines from whose pops wisps of white steam were spiralling up to disappear among the white flakes swirling down. He looked back toward the west, where the marker on his waycar was barely visible and started walking toward it.

BUD was cooking. He had fried three slices of ham; but Palomino Jim didn't wake up, so he put one aside, ate his own and went out to let off the brakes when the engineer whistled a highball.

The youth did not come in immediately after the train had pulled away. Armed with a brake club, he took his station on the fourth car ahead of the caboose. That's where the mountain brakemen usually rode when there were non-air cars on the rear. In fair weather or in foul, they stayed on the decks, alert and ready to start winding brake wheels if a string of cars should break away and change direction.

Jess McElroy, watching through the side window, could see his nephew's light gleaming through the snow. The track was slick and the snow kept forming little mountain ridges on the rail. When the train ran off the level stretch of the station layout and started nosing up the grade, the drivers slipped and spun idly on the snowy iron.

Jim placed his club and lantern within easy reach, then he opened the window wide, momentarily expecting a drawbar to give way and turn a cut of cars loose to seek a lower level. The break came when they were less than a half-mile above Spruce Grove. One moment he heard

the steady rhythmic beat of two exhausts working first alternately and then in unison. The next there came a tortured blare as drivers lost traction and spun in the soft wet snow.

Up in the cabs, the eagle-eyes worked sand and throttle. Two engines leaped ahead, taking the slack out of loose couplers. Jess heard the splinter of wood and the creak of rusty iron as a weak one parted.

The slack ran in. The locomotive whistle started the three long blasts of the broke-in-two. Before the first one ended, Jess had left the cupola, taking club and lantern with him, and was twirling the brake wheel on the back platform. The caboose rolled back a foot or two and brought up tight against its creaking drawbar.

Jim dashed out in his stocking feet. He was chattering: "What is it, Jess? Whatsa matter?"

"Pulled a drawbar," the skipper drawled. "Some hoghead pulls one every night lettin' his drivers slip on this here mountain."

His apprehension lulled by the conductor's calmness, the rancher went inside and put on his boots. Jess set the brake tight and stood for a little while on the platform listening. He did not know where the break was; but because there had evidently been enough emergency air brakes behind it to hold themselves and the non-air cars, he assumed it must be well up toward the head end. Cautioning Palomino Jim to stay awake and be ready to lope off if the train should start rolling back, he struck out for the head end to investigate.

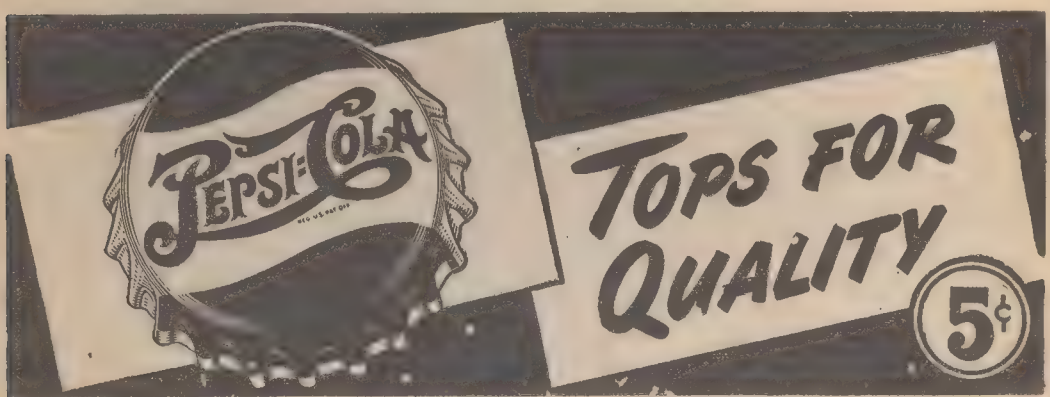
He met Bud coming back setting brakes, and warned him to look out for the rear end.

"You tie down these seven non-airs," he ordered. "Then bleed the air off the next four cars and tie them down. We sure don't want to take a chance on this train getting away from us."

He trusted Bud implicitly. When he told Bud to do a thing, it was as good as done. He strode on leisurely toward the engine. There was no use getting excited over a broken coupler. The rest of the crew were certainly not excited.

When he arrived at the rear end of the head flatcar, he found the head brakeman and both engineers there with two torches and a lantern squirting tobacco juice into a jumbled mass of broken drawbar, cross member, bolts, nuts, springs and washers which had pulled out of the head end of the one behind it and had fallen into the track.

Taking charge of the situation, Jess helped them to clean the debris



off the track, assisted the head brakeman in digging a big chain out of an engine locker, tied the second car to the one ahead of it, and took it up to the top of the hill. He was gone an hour.

BUD stayed with the train. He obeyed instructions to the letter. He anchored his train securely with sufficient brakes to hold it against any ordinary shock, and since no trains were coming behind him for an hour to be flagged, he went into the waycar to thaw out.

His father was not there. The old rancher had taken a lantern and gone out to see how his horses were getting along. He was not as spry as his young son or his older brother, neither did he understand as well as they the use of all the gadgets on a freight car. He did not know, for instance, that if he should accidently kick an angle-cock with the heel of a hand-tailored boot, in climbing over a coupler, he might close the train line and leave the cars behind it without brakes.

Palomino Jim trudged up one side of the train. The ponies were taking life easy and none of them were down. He crossed the coupling behind the second car of horses, cussing when the little gadget he stepped on turned and almost spilled him head first into the snow. Then he returned to the caboose.

After putting away the lantern, he ate the slice of ham which Bud set out for him. He didn't say a word while he was eating it; but after he had finished, he pushed back the tin plate, halfway looked at his son and mumbled:

"Is there any coffee left in that pot?"

There wasn't, not a drop. Bud squeezed the handle, but the pot was dry and he didn't have time to make any because right then he heard the engine whistle as she came backing down the grade. Grabbing his club and lantern, the youth struck out for the middle of the train to be ready to let off brakes as soon as the engineer gave the signal.

Jess got off the tank when they stopped to pick up the red light out of the track. There were brakes set on the rear of the train which must be let off by hand before they could start the train. He remembered the seven non-air cars back; by all means, there should be two men on them when they started to leave. So he told the head brakeman:

"You make this couplin' and test the air. Be sure it goes through all them cars when you cut it in. I'll go back and help Bud let off them brakes."

Trainmen didn't test air at the turn of the century the way they test it now after an engine has been cut off. They didn't take time to have the hoghead apply his brakes, walk the tops to see that the brakes were set, and retrace their steps to see that they all turned loose. This brakeman's test consisted only of walking along beside the cars and jerking the bleed-cocks to see whether or not there was air in the cylinders.

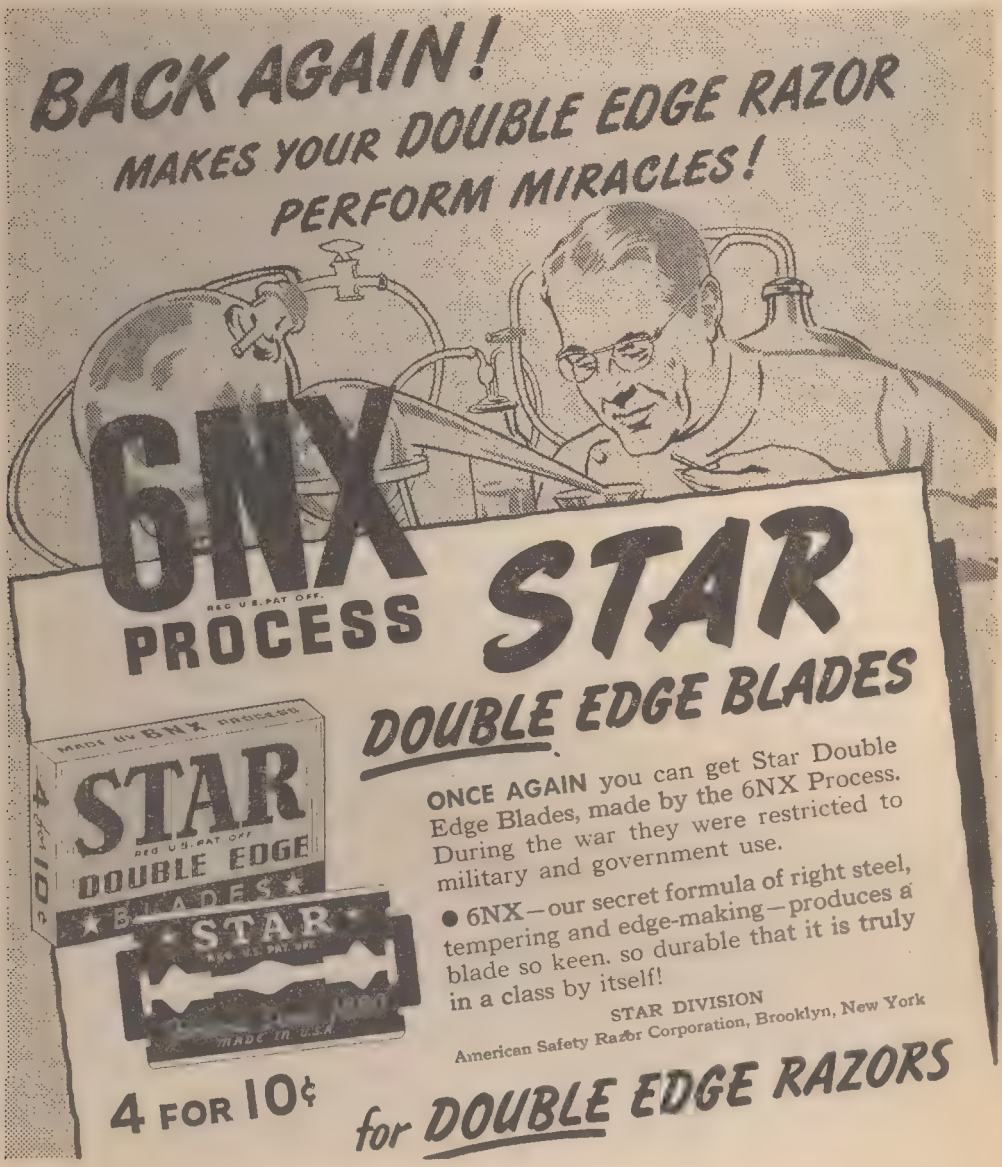
The fellow was different from Bud. He believed he had learned more about railroading in thirteen months than any old moss-grown, lantern-jawed conductor could teach him in a lifetime. He coupled the air hose, cut in the air, and listened to it running back into the car behind: then he walked back a little way, jerking the bleed-cock on each car as he passed it.

Thus he "tested" the flat and five

stock cars, and did not go back to the sixth. He didn't stop to think that the air hissing out of those cylinders might have been old air which had remained in them while the locomotive was cut off. He assumed it was fresh air, pumped in from the engine since he had made the coupling.

When he came in sight of the way-car marker, the brakeman stopped, pulled his earflaps down, turned his coat collar up to meet them, and waited there for the highball. He didn't wait long. Air pressure came up quickly, because the pump was filling only three cars instead of a whole train.

THE quick rise in pressure should have warned the engineer, but his mind centered on something else.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When the needle pointed to 70 he whistled "off brakes." Jess was handling the ones on the four rear cars and the caboose. Bud was looking after the others and worked rapidly back from the head of the cut.

After releasing the brake on his four stock cars, Jess stood on the back platform watching Bud's light. When it stopped, he gave a highball. Bud repeated it. The head brakeman passed it, and struck out on a run for the engine so he could crawl up into the cab before they started moving.

Jess had not let off the waycar brake yet. By holding it set until the last possible second, he could give his engineer an anchor when he rammed the train back against it to take the slack. He kicked off the dog and thrust his club into the wheel for a quick release at the right moment.

The engineer whistled off. Jess knew that right then he was throwing his reverse into backward motion to take the slack. He gripped his club tight and waited.

Cars rolled back against the caboose and shoved it slowly down the hill. Engineers horsed Johnson bars into forward corners and worked sand and steam. Jess heard the slack going out away up toward the head end, but it didn't follow on down the hill. The rear end did not budge. The train acted as if there were airbrakes sticking.

Into the night Jess muttered: "You hog maulers had better pump 'em off before you try to start. You'll fool around here and yank out another drawbar."

But the conductor could not see the airgage and there was no air in his caboose. He didn't know that up there the needle showed brakes at full release, nor that the only sticking brakes were two behind four on the head end that didn't have any pipe connections with the engine. Johnson bars moved again. The old skipper imagined he could hear the hoggers cursing as they tugged and heaved trying to horse them over. Each engine gave one short pant in backward motion. Train and waycar rolled six or eight feet down the hill. There should be plenty of slack in the rear end now, for the conductor was holding the waycar brake tight almost to the point of skidding.

Again the runners whistled off and put the reverse levers into forward corners. Each engine gave two or three violent coughs and stopped. Jess didn't release the brake, because there was no slack going out ahead of him. Instead, the caboose was creeping slowly backward, and an instant later the three long blasts of a broke-in-two were ringing again through the eddying snow.

The wheels moved a little faster, jostling and jiggling the brake-beams as the wheels turned around. Jess was startled. For a brief moment he did not realize what had happened. If the train had pulled in two near the head end, the brake was back among the non-air cars, the caboose brake should almost hold them. Still wondering, the O. R. C. set the caboose brake and kicked the dog in place to hold it.

JIM had been lying down on the bunk, but had not been asleep. He came to the door at once and wanted to know again what had gone wrong. The conductor wasted no time.

"We've pulled another drawbar," Jess answered tensely. "You'd better grab your grip and get off here. We may be in trouble."

"You don't mean you're train's getting away from you?"

"It has happened, brother," the lean old skipper flung back as he hurried through the waycar on his way to the roofs. "I don't like the way these cars are rolling. You get off and stay here till we see what's happened."

Jess hurried out through the front door and scaled the end ladder to the hurricane deck. He saw Bud's light in the snow—it appeared to be about six cars away. He set one brake, but it didn't seem to do much good, for cars with no brakes on them do not stand still on a two-percent grade. These were gaining headway fast.

The old-timer hurried ahead and tied down another one. His anxiety was increasing. If the non-air cars had broken loose alone, Bud's light should now be coming toward him. Instead, it was drifting farther away. Evidently some of the cars which had had air in them had broken loose with the others, but for some reason their air was not working. He did not know why.

He took the next car at a string-halted run. He was setting its brake when it ran through the upper switch at Spruce Grove. He knew by the way Bud's light kept receding that their whole train, or most of it, was loose on the hill.

The cars lost speed as they ran through the level stretch between the Spruce Grove switches. If there had been a thousand feet of it, they could have stopped the train and held it. But there wasn't! Before the forward cars had quit shoving down the two-percent grade above, the caboose and the rear ones were spilling off the flat down the four-percent grade, dragging the others after them.

Jess was setting the fifth brake when the car he rode reeled drunkenly and, turning the sharp curve at the top, careened down the mountain. The next brake was set. He took up the slack in it and hurried on until he met Bud coming back.

"What went wrong up there?" he queried.

"I don't know," his nephew muttered. "Maybe the head brakeman failed to cut in the air. Maybe my father kicked an angle-cock shut when he was foolin' around the train. All I know is there was some air-brakes set up close to the head end when the hogheads tried to start it, but they turned loose when we broke in two. There's not a brake holdin' on the train now—except the hand ones, an' they don't seem to be doin' much good."

Jess asked how many cars there were in the cut. The reply came:

"Fourteen, I think. No, there's seven non-airs: four I bled off when we broke in two, and three ahead of 'em. Fourteen an' the caboose makes fifteen."

Both men knew exactly what they were up against. In the early day, trains had carried a brakeman for each five cars with hand-brakes kept up in perfect working order. When fifteen cars with no air and with only two men rolled over the rim at twelve miles an hour and spilled down the slopping rail covered with soft snow, the odds were against the men.

The canyon was littered with rusty scrap iron accumulated there from just such setups; and headstones in the Gunther graveyard marked the spot for men who had been fool enough to stay and try to stop them.

BUD looked over the roof at white ground that was skimming by too fast, much too fast. "Where's Dad?" he queried.

"I told him to get off back there where we broke in two," Jess answered.

"Did he do it?"

"I *hope* he did."

Plenty of good men would have joined the birds then and there. They both thought of that, but neither mentioned it. Bud thrust his club into the spokes of the nearest wheel and tightened it three notches. The wheels quit rolling; the car slid like a sled on runners, and a gentle hiss came up from the track below.

"Watch 'em, kid," the skipper warned. "Don't screw 'em too tight."

Bud unwound the brake so the wheels would roll. In stolid silence, they separated. Bud went up the train. Jess went down, listening to the sound of the wheels as he walked along. If they rolled too free, he tightened the brake; if they slid on the rail, he gave it slack.

Flanges squealed ominously on the curves. The scream grew louder and higher pitched as their speed increased almost imperceptibly. Jess worked down to the caboose and back till he met Bud again. They were certainly rolling faster than they had been two miles back.

"It looks like they're hell an' gone," Bud said in a hollow voice.

"There's only one chance," Jess told him. The skipper wasn't drawling now. "If we can stay with 'em an' keep 'em from rollin' out till they run off the snow, we may stop 'em."

"Yeah, if they don't smack that coal drag comin' up behind us."

The car they rode took a sharp curve where the track cut through a shoulder of rocks at a turn in the canyon wall. It heeled over until Jess imagined he could feel the wheels raise up and jostle back. He looked for a place to jump, but there wasn't any. When the car came out of the cut with one corner skimming the ballast, a high wall rose on one side, with a three-hundred-foot drop on the other. It righted itself and sailed on and the others followed.

"That was close," he said tightly. "Maybe we'd better look for a spot and—"

He didn't finish what he had started to say. A frightened palomino right under his feet whinnied piteously. It was answered by others.

Bud gripped his club and strode forward to see if he could take a notch on the brakes and keep them on the iron. Jess turned back, using his club like a man in a trance. The next two miles seemed like a million. Flanges squealed and cars rocked crazily. Every time they took a curve, Jess expected to see a car

go reeling off into space or slough into a canyon wall and pile the rest up behind it.

FOUR miles from the rim, the cars were no longer gaining. The wheels ran so hot that they were melting the snow as the first ones crossed it, and drying the track as the rest rolled down. The speed fell off a little. Bud and his uncle kept working the brakes. The scream of wheels was softened. The palominos rode in silence. Six miles from where they had broken off, the cars rolled to a stop. The men had won!

When the last wheel quit turning, Jess led the way back to the caboose. He stepped aside and let Bud go through the window ahead of him.

As his big feet hit the floor, Bud called back to his uncle, who was close behind: "These cars has shore got good brakes on 'em."

"Looks to me like they've got good brakemen, too," said a strange-sounding voice which came out of the corner where Palomino Jim was standing behind the stove.

"You still on here?" Jess growled.

"It shore ain't my ghost, brother," the rancher answered.

"I thought I told you to get off back there at the Grove."

"An' leave you an' Bud here riskin' your necks to save my Palominos?"

"But there wasn't a cock-eyed thing you could do. You couldn't set a brake. Why, you couldn't even—"

"I could make a pot of fresh coffee," Jim interrupted.

"Has it boiled yet?" Bud asked.

"It sure has."

"Then, for gosh sake, Dad, pour me out a cup. I need it to stop my knees from knockin' the hide off of each other."

Bud sipped the beverage and said it was good.

"I always did make good coffee," his father boasted.

The faint and far-off *whamm-whamm-whamm* of a laboring exhaust came drifting up the snow-covered gorge. Bud set down his coffee and listened.

"It's that coal drag comin' up the mountain," he reckoned, wise in the ways of the talking rail. "I've got to grab me a red one an' go back there and flag him down."

He picked up a crimson light and a white one and darted out through the rear door. His father looked after him and sighed. Jess poured another cup of Java for himself and one for Jim, and they sipped them in understanding silence.

ALL-ELECTRIC STREET-CAR

By JOHN A. MILLER

WITH MARKETS for equipment dwindling as fast as trolley lines are ripped up, the postwar arrival of the all-electric street-car is of vital interest to all concerned with electric traction. Of the 27,000 cars in operation within the U.S. today, fewer than 3,000 are recent models. If street-car owners are willing to invest, and, if the new design achieves its expected success, the all-electric trolley may become part of a coordinated transportation system servicing most of our large cities.

Fundamentally, the new car is an improved version of the PCC (Presidents' Conference Committee) streamliner. Considerably modified from the original vehicle first used in Brooklyn in 1936, the present design was the product of the Transit Research Corporation. Two models have been constructed; one by St. Louis Car Company for the Pittsburgh Railways, the other by Pullman-Standard Car Company for the Boston Elevated.

Electric Lines

Conducted by

STEPHEN D. MAGUIRE

While electric cars are an old story, the all-electric trolley is something new. The first electric cars operating in the basic principles employed today made their debut in Richmond Va., as far back as 1887. Hand brakes were then used, but before long compressed air was introduced as a means of operating the brakes. Yet possibly no feature has caused more headaches than

PORTRAIT of the PCC—revenue winner in Dallas, Johnstown and Louisville. Outline of all-electric differs only in ventilating duct extended front and back of trolley housing

the air equipment. The compressor has been a constant source of vibration and noise. Moisture has condensed and frozen in its pipes during the winter. Add to these, the tendency of values to stick and refuse to work.

The new PCC car discards the use of compressed air. All braking is done electrically, the major part by a scheme of changing the wiring connections to the motors so as virtually to convert them into dynamos, when pressure is exerted to stop. An electro-magnetic track brake is a secondary means of halting. A third brake, mainly used when the car remains standing for a long period, operates by a combination of springs and electricity on a drum on the motor shaft. Door engines, sanders, and other mechanisms formerly air-operated, have been redesigned for electric power.

More noticeable as far as the rider is concerned is the provision of standee windows, located above the regular windows. These permit a person standing in the aisle to look out without stooping. Rearrangement of the window posts to coincide with the seat spacing affords passengers unimpaired vision, a comfort formerly ignored.

The change in the position of the principal member of the side frame may not be readily apparent, but it is a major improvement. Now combined with the arm rest—alongside the narrowest part of the body of the seated passenger—it increases the width of the interior several inches without adding to the overall dimensions. The ventilating system, also, has been modified to standards of new developments.

Rubber-cushioned wheels are used as in previous PCC car designs. Synthetic rubber has been substituted for the nat-

ural product, but this has worked quite satisfactorily. Wartime restrictions compel the use of steel springs, but ultimately plans will include a combination of steel and rubber springs, so arranged as to take advantage of the best features of each.

In spite of the trend toward buses, statistics indicate the superiority of street-cars in handling the heavy traffic of a metropolis. The 27,000 trolleys in use now manage to haul more passengers than the 48,000 rival buses. Yet postwar modernization plans keep shouting for motor coaches to replace the transit system of the street-car.

From the standpoint of economical operation, the large carrying capacity of the trolley is important; and experience indicates that the modern, easy-riding car, with its rapid start and stop, is popular with the public. Its use is spreading, even in medium-sized cities where the windup of street-car operation was predicted a short time ago. Dallas, Johnstown and Louisville are examples of this change-over to PCC equipment, which has paid well to the companies concerned.

Present estimates mention 5,000 as the expected number of PCC all-electric streamliners that will probably be bought within the next ten years. If based on the replacement of equipment now in service, this figure falls mighty short. The future of the street-car hangs upon the long or short view that transit companies will take on the matter of investment for insuring profits and long life.

CARBARN COMMENT

Steve Maguire

THE PARADE of last runs on street-car lines of America continues. In spite of announcements concerning the purchase of PCC equipment, the trend is still toward abandonment, even in cities where new cars are on order.

Judging from its purchase of 400 streamlined trolleys, Chicago may shortly become the largest PCC-car operator in the U.S. A report from Harold C. Golk, F 2/c, USSPC 1191, c/o Fleet Post Office, San Francisco, states that the Windy City has 280 streamliners already in service; this will bring the total to 680. However, the same plan responsible for this order includes the ripping up of 22 existent lines to be replaced by six trackless trolley routes and sixteen bus lines. Heavier traffic will remain with the street-cars.

In Detroit, the press hailed the arrival of 80 PCCs, first new trolleys to reach town

MULTI-TRACKED terminal of the Chicago, Aurora & Elgin in downtown Chicago

in the last twenty years. But the city fathers seem to indicate this is only a breather until gasoline coaches roll off the assembly lines. Six rail lines: Charlevoix, 14th, Hamilton, Mt. Elliot, Oakman and Trumball, are scheduled for abandonment in the near future. "How many more will go," writes Dick Andrews, 14569 Asbury Park, Detroit, 27, Mich., "is hard to tell, for a bid for 350 buses is already in. I think it's 'move over, Los Angeles,' for the outlook here isn't too bright."

Moving eastward, we find Baltimore in the throes of a 7½-million-dollar modernization scheme which entails the replacement of 16 of its 27 trolley lines by buses. The Baltimore Transit Company came into the hands of the American City Lines not long ago, when that outfit promised no interference with the company's policies. As yet there is no sign of where trackless trolleys stand, and the changeover will take an estimated two years. Our bet is that people in Baltimore will ride 16 new bus lines.

Twenty trackless trolleys ordered for Oklahoma City will soon go a-begging. The Oklahoma Railway Company has been sold to Eugene Jordan, president of Jordan Petroleum Company, and Robert S. Bowers, president of the Oklahoma Transportation Company, interstate bus operators. The combine immediately announced that street-cars will be eliminated and tracks hauled up as soon as possible. Two surveys have been made for a new transportation system, engineered by *General Motors Company*.

To wind up this woeful tale, you can check the New Albany & Louisville Electric off the roster published last *December*. Richard Hardin, 619 Creel Ave., Louisville 8, Ky., informs us that operation will cease in the near future. The line—remnant of the Interstate Public Service Company—operates eight miles of rail between New Albany and Louisville, crossing over the Ohio river to the latter city by Kentucky & Indiana bridge. This steam road shares its facilities with the B&O, Southern and Monon also. NA&L equipment consists of six cars leased from the Louisville Railway, together with several trailers. Although city cars, they carry whistles, marker lights, and operate along a double-tracked right-of-way protected with regulation signals.

The Dunmore branch of the Laurel Line is another casualty. Originally part of the main line between Scranton and Wilkes-

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NEW EQUIPMENT for CA&E delivered recently. Outshopped by the St. Louis Car Co. along old designs, cars represent Sunset Lines' plans for standardization

Barre, Pa., a direct route tunneled through the hills near Scranton relegated this to a branch route. The unusual feature of the Dunmore section was its three terminals. The entire run totalled less than ten miles, shaped in the form of a giant wye. Cars left Scranton for Dunmore, where they reversed and switched off to Providence, another part of Scranton. There they turned again, heading back to the starting point at Scranton.

John J. Gabriel, 266 Frederick St., Kingston, Pa., who sent us this information, says that the future existence of the Laurel Line depends on the Scranton tunnel. While the branch was running, in an emergency cars could be sent over the branch on the top of the mountain, connecting with the main line beyond, as was done last year when the tunnel became flooded. "A model of Laurel Line," John concluded, "will be set up by our model group in the Wilkes-Barre station, where three rooms have been turned over for our use."

* * *

IRISH street-cars are scarcely more than a memory, reports Arthur P. Hughes, Green Gates, Ballylickey, Bantry, County Cork, Eire.

"Only three street-car routes are left of the former Dublin United Tramways system," he writes, "and even these are scheduled for replacement by buses when conditions permit. During the past few years they have been an undisguised blessing to the city, carrying easily their extra share of traffic. The line to Dalkey, 9 miles distant, operates large double-deck bogie cars all day long on service with a headway of every minute or so. These lines are laid to the standard Irish gage of 5 feet, 3 inches. Does America have any street-cars of this gage?"

Arthur hopes to hear from juice fans in U.S. and Canada, especially those who will send him trolley tickets, transfers, tokens.

* * *

TEARING DOWN the Sioux City, Ia., elevated in 1901 was first in a long chain of abandonments throughout the United States. *Electric Railroads,* in its October issue, covers the short history of this line. Published free to ERA members, the bulletin may be obtained for 35c a copy from Electric Railroaders Assn., Dept. M, 51 W. 35th St., New York City 1.

* * *

STREET-CAR GAGES. Several letters recently have brought the subject of standard gages to the fore, as variation in the width of street-car rails seemed to be an early point of rivalry between railroads and city lines.

"Usual reason for the 5 foot 2½ inch gage on our eastern trolley lines," reports Ray Mermet, 75 Warren Terrace, Longmeadow 6, Mass., "was a stipulation in original street-car franchises, in order to prevent the running of steam equipment through the city

streets. The early city founders suspected tie-ups between the two transportation systems, and took no chances."

Sydney Walker, Box 647, Crum Lynne, Pa., explains the situation in Philadelphia this way. "While the wide gage was often used to permit horse and wagons to ride the rails, Philadelphia used it to avoid having its local lines form a network for the transfer of freight between the various steam roads entering into the Quaker City. Other connecting street-car lines had to follow suit. They built their tracks at 5′ 2½″ gage to form a continuous web of electric railways in Pennsylvania, and opening westward. The only system of standard gage in Philadelphia is the Philadelphia & Western, a disguise of the Wabash Railroad to gain entrance into the Atlantic seaboard—a plan that failed."

"You might also ask, 'Why is 4′ 8½″ gage so common on juice lines outside the Pennsylvania area?'" suggests Felix E. Reifschneider, formerly with Office of Defense Transportation. "The origin of standard gage on steam roads is lost in the mists of antiquity and possibly the truth will never be known. Brought over from England and used on early roads here, it won out in the battle of the gages, which took place in the 19th century.

"But there never has been a standard trolley gage, which shows there is no essential reason for adopting any particular one, beyond local prejudice or preference. Many cities disregarded width used by steam roads, afraid that equipment would flood their streets; others found wide rails convenient for wagon wheels. Today, there are streetcars on eastern Pennsylvania with 5′ 2¼″; in Pittsburgh, 5′ 2½″ in Norfolk, Va. and Columbus, O., 5′ 2″. All of these are interchangeable. But Louisville, Ky., five-foot gage is off the track.

"Speaking of gages, try to explain these: Baltimore 5′ 4½″, St. Louis 4′ 10″, Toronto, Ont. 4′ 10⅞″. Then both Los Angeles and Denver use 3′ 6″ track, while Pueblo, Colo., has the unique 4-foot gage."

* * *

Photo by S. Borden

CAPE BRETON Birney No. 51 in terminal yards at Sydney, N. S.

LONG AGO, when *The Little Red Car* was new, buildings in the city were not very tall, and the cobblestones rang with the clatter of horses' hoofs. For a while everyone crowded the red trolley, until faster streetcars and autos came along. Then no one wanted it.

The Little Red Car by Esther K. Meeks makes a fairy tale of trolley history for youngsters three and up. Over half its 32 illustrated pages by Ernie King are in color. (Publisher: Wilcox & Follett, 1255 Wabash, Chicago 5; price: $1)

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RAILROAD MAGAZINE
Index for 1945

FOR the third year we offer a detailed, cross-reference index of fact material used in *Railroad Magazine*. Each item is followed by the month and page. Asterisks (*) indicate pictures. The list is issued mainly to serve readers who save their old copies and want to check back on elusive bits of information. We also have considered the needs of railroad men, students, historians, journalists and other researchers.

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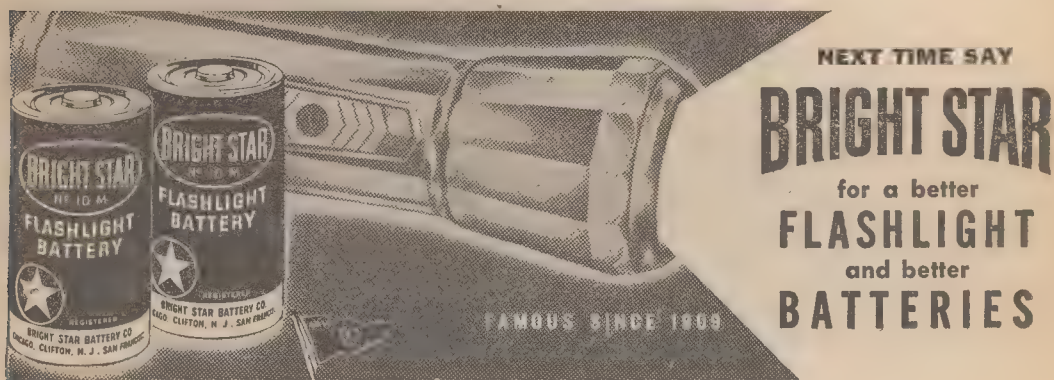

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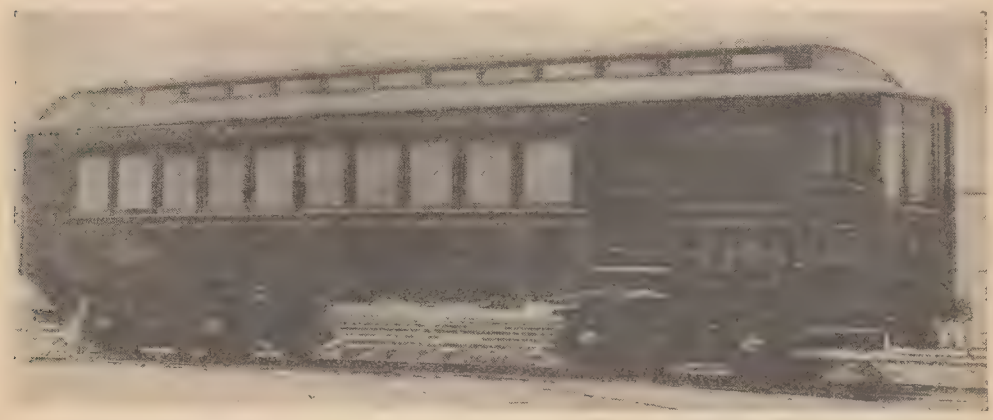

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(R) J. R. BERNARD, 656 Oriole Parkway, Toronto, Canada, will buy *Railroad Magazine* Jan., Apr., June, Nov. '43; must have covers, unclipped; also old CNR and CPR tts. and recent CNR, CPR, NJR, CVR emp. tts.

FRANK BIBB, 701 Cathedral St., Baltimore, Md., wants old pix of D&RG: mixed trains, open excursion cars to Colo. Springs; also Gt. W. dummy tr. at St. Paul, Saltair Beach steam dummies, Interoc. de Mex. sleepers, Nacional de Mex. trains, Prince Edw. Is. RR. trains.

RAILROAD CAMERA CLUB is open to all who collect railroad or streetcar pictures or other railroadiana such as timetables, passes, train orders, trolley transfers, magazines, books, etc. There are no fees, no dues.

Membership card and pin are given free to anyone sending us the latest Reader's Choice coupon and a self-addressed stamped envelope. If you don't want to clip page 145 make your own coupon. Address *Railroad Magazine*, 205 E. 42nd Street, New York City 17. Tell us what you want or what you offer; otherwise your name will not be printed here.

(R) DON BLANCK, 3836 Hollywood Ave., Hollywood, Ill., will buy *Railroad Magazine* from Jan. '41 thru Aug. '43. Will sell suburban tts. from C&NW, Burlington, Milw., PRR, CRI&P service out of Chicago, in 15c and 25c assortments. State roads you want. Has complete tts. many big roads for sale or trade for *Railroad Magazine*.

(*) J. M. BLOWER, SoM3/c, U. S. S. PCE (R) 848, c/o F. P. O., San Francisco, Calif., will buy any size pix or tts., emp. tts. of NOT&L elec.

(R*) O. H. BORSUM, 730 Carroll St., Brooklyn 15, N. Y. wants *Railroad Magazines* '40 to date. Also size 116 pix and clear negs. of old or new pass. cars. Will sell size 620 negs. of locos and trains, *Trains* '42 to date; dining-car menus, '38 and '40 tts.; street-car trsfs; pix of rapid transit eqpmt; copy of England's *Off. Guide*. Lists free. Answers all mail.

(R) W. E. BOSTWICK, Lt. Cdr., USNR, 2323 So. 21st St., Philadelphia 46, Pa., wants Nov. '43 *Railroad Magazine*.

JAMES BOWIE, 3225a Pestalozzi St., St. Louis, 18, Mo., offers list and 5 pix 25c. Wants negs., size 616, 122, all roads. Will buy or trade size 616 negs. of roads around St. Louis.

(R) FLOYD BRUNER, East Marion, N. C., has '39 thru '45 *Railroad Magazine* and *Trains* mag. Jan., Feb., Mar., Apr., May, June, July, Sept., Oct. 45; pix of Midwest trains. Will trade for size 116 folding Kodak, good cond. All mags. good cond.

(R) FRANK E. BUTTS, 1118 East 64th St., Chicago, Ill., has few *Railroad Magazines* and *Off. Guides* for sale; size 300, 316 negs. of elec. Send for list.

ROBT. CARTER, 38 Parker St., Freehold, N. J., sells size 116-616 PRR, CNJ, NYC, other road pix. List and sample, 10c.

GRAHAM CLARKE, Amawalk Road, Katonah, N. Y., will buy size 120 or larger pix, and emp. tts. of CPR and GT in Maine, B&M, MEC, BAR, Rutland and CV; or will swap for recent *Off. Guides* and *SP* bulletins.

(R) C. MEL CLUCAS, 30 Harley Ave., Toronto 12, Ont., Canada, has *Railroad Magazine*, Oct. '40 through Nov. '45 complete except Dec. '43 and June '45, good cond. 15c ea. postpaid, or lot for $6, postage collect.

EUGENE COMMINS, 4 E. 95th St., N. Y. C. 28, wants NYC, Penn. mainline R.R.S. emp. tts.

SANDY W. CONNER, Box 484, Victoria, Va., trades Virginian train ords. for any road ords. except NYC, SP, UP, NP, ATSF and ACL.

RICHARD COOK, 824 West Main, Murfreesboro, Tenn., will swap colored or black view cards of locos and ry. scenes. Free NC&StL 4-8-4 pix, size 116 to fans outside U. S.

(R) B. R. COOPER, 29 W. 11th, Covington, Ky., buys *Railroad Magazine* Apr. and May '45; Apr. '33; *Trains* Jan., Jul. '43; Feb., Mar., May, Sept., '42; Mar. Apr., May, Jul., Sept., Dec. '41.

(*) D. OWEN DAVIES, 1702 N. Wells St., Chicago 14, Ill., will sell *Mass Transportation* '41-42 (contains PCC car pix.), 1 yr. (12 nos.) $2. Offers list old juice and steam items, tts., passes, histories.

JOHN DAVIS, Box 42, Lockes Mills, Maine, wants GLW tr. ords. with clearances. D&FSL ords.

Photo by Preston George, Altus, Okla.

CHICAGOAN, Santa Fe Diesel-liner, northbound near Ponca City, Okla.

(*) BILL DONNELLY, 169 E. Julian St., San Jose 11, Calif., trades San Francisco trsfs. for other cities; will swap SP and WP tr. ords.

R. B. FRISBY, 83 Brander Mount, Leeds 9, Yorkshire, will sell name and number plates of British locos, rr. tickets, *Guides*, platform tickets or swap for similar material on N. Amer. roads.

(R) JOHN WM. GRIFFIN, 25 Manning Arcade Annex, Toronto 1, Canada, pays 50c ea. for *Railroad Magazine*, Feb. '43, May '44; *Trains*, Nov. '42, Feb. '43. Wants *Elec. Railroads* (published by ERA) Nos. 6-11, $1.50 the lot; all items good cond., write first. Wants tts. small Canada lines or old tts. all Canada rds.

(R) S. P. GUTHRIE, Cold Springs, Ky., will buy *Railroad Magazine* Sept. '32; Jan., Apr. '33; *Trains* Feb. '42 and Jan. '43; pix of W. Va. aband. short lines.

(R) C. F. HARDER, 692 14th Ave., Paterson, N. J., will sell or swap *Railroad Magazine*, '39 to date, good cond. List for stamp.

(R) RICHARD HERBERT, 70 Clinton St., White Plains, N. Y., will buy NYC roster, appeared May through Aug. '40 *Railroad Magazine*, good cond.

(*) EDMUND HESSION, Box 46, Grove Hall, Mass., wants old st. rwy. guides, eastern states, esp. *Trolley Trips through N. E. & Eastern N. Y.* State price.

PTE BILL HOOD, c/o 301 Woodmount Ave., Toronto, Ont., Canada, wants clear pix, any size, aband. Niagara Gorge line; also pix International Ry. Co.'s Buffalo, Lockport, Olcott Beach interurbans.

DALE E. KING, R. D. No. 1, East Berlin, Pa., wants clear PRR loco pix, in good cond.; also rr. albums.

(*) FRED KRAMER, 3721 Rosemont Ave., Drexel Hill, Pa., will swap transit maps, trsfs. literature and tts.; will buy size 116 or 616 juice pix. Send lists.

(R) HOWARD JOHNSTON, 25 Parkview Ave., Willowdale, Ont., Canada, wants *Railroad Magazines*, books, tts., trolley trsfs. and maps; also model railroad H0 gage.

WILLIAM JOHNSTON, 28 Prospect St., Yonkers, N. Y., wants any info. on aband. rr. running from Poughkeepsie through Pleasant Valley, N. Y.; also pix.

(R) E. D. JONES, 427 Osborne Ave., Verdun, Montreal 19, Que., Canada, offers *Railroad Magazines* 25c ea., 5 for $1 postpaid, Feb., May '38; Dec. '39; Jan., Feb., Apr. to July, Oct. '40; Jan., Feb., Apr. to Nov. '41; Feb. to Dec. '42; Jan. to May, July to Dec. '43; all '44; Jan. to May, July, Aug. Oct., Nov. '45, good cond.

(R) ROBT. LANE, 249 C. Decatur, Memphis 7, Tenn., trades *Railroad Magazine for Trains*, or 3 tts. any road for *Trains*; wants *Off. Guides*, '31 and '42.

J. GREENE MACKENZIE, Oak Lawn, Atlanta, Mo., wants wreck, small pieces wood from wrecks and junked famous eqpmt.

Sgt. RAY MAGEE, 37th Sq. 316th Troop Carrier Grp., Pope Field, Ft. Bragg, N. C., buys p. c. or small size pix of MoP engines, esp. old-time power. Send lists.

J. D. MAHONEY, 59 Bletsoe Ave., Spreydon, Christchurch, New Zealand, has 1895 *American Car Builders Encycl.* Will swap for other ry. books or copies of *Baldwin Locomo. mags.* prior to '35.

LAWRENCE MARTIN, 41 Broadway N., Portage la Prairil, Manitoba, Canada, will trade or buy CPR loco pix, 2 pix for one neg.

DON MATHER, 187 W. Sinclair St., Wabash, Ind., will buy any size pix of Indiana fr. and pass. cars; also fr. rolling stock, right-of-way views, tts., etc.

(*) RUFUS B. McCALL, 182 Peachtree Way NE, Atlanta, Ga., will buy (or swap Atlanta map) transportation maps from Buffalo, Louisville, Dayton, Des Moines, San Diego, El Paso, Knoxville, Norfolk.

(R) MAURICE McLAUGHLIN, 2215 No. 46th St., Seattle, Wash. will sell *Railroad Magazine*, Feb. '42 to Oct. '45, 10c ea., good cond.

JOHN MINKE, 76 Norman Pl., Tenafly, N. J., would like to correspond with 12-year-old tt. and pix fans.

GEO. MOCK, Jr., R.F.D. 1, Albany, Ga., sells ACL, ACL ords to trade for ords. any road, esp. other ACL, or will sell for 1c ea.

(*) RICHARD MONELL, Box 1824, Avondale, Ariz., has size 120 pix SP trains, all types to swap for same size other roads; likes streetcar pix too.

(*) EARL MOORE, 3746 Sheffield Ave., Chicago 13, Ill., has pix and negs. of streetcar Post Offices and interurbans having RPO serv., any size. Will buy, sell, or swap pix and buy postal matter cancelled on these cars; also wants data about them. Has RPO steam line cancels ten yrs. old 5c ea. on entire cover.

(R) Cpl. FRITZ G. NAGEL, 660 Franklin St., Denver 3, Colo., offers for sale to highest bidder complete set of *Railroad Magazine* Jan. '36 to Jan. '44. (except May, June, July '43); also *Trains*, Nov. '40 through Mar. '43, plus May, Dec. '43, Feb. '44, Sept. '44, Jan. '45, all good cond. Prefers to sell as lots.

JOHN E. O'NEILL, Jr., Box 85, Chadbourn, N. C., will buy pix negs. of old CV loco and eqpmt., prior to '15, pref. before '02. Also ACL locos prior to '30, esp. early 400's., American type, Atlantic type, 200's, 300's, 900's, 1000's. Wants *Trains* for Dec. '41 and Aug. '42. Answers all mail.

(*) JAY OBRION, 211 Ellis St., Peoria, Ill., wants old streetcars for streetcar reservation he is establishing.

(*) RUSSELL L. OLSON, 3708 26th Ave., So. Mpls. 6, Minn., has 2500 Twin City Rapid Transit trsfs. to trade; also trade rosters; have 30 to trade for others, esp. CNSM, AURR, CA&E, LVT.

E. M. PALMER, A Y H School, Meredith, N. H., will trade maps, guides and trsfs. from Boston Elevated Ry.; trsfs. from Capital Transit Co., Wash., D. C., Kansas City, Mo. Public Serv. Co. and Eastern Mass. St. Ry. for those of other cities.

(R) CARL H. PENNRICH, 35-43 84th St., Jackson Heights, N. Y., has *Railroad Magazine* '36 to '40 incl. for sale, perfect. Complete yrs. only $1.50 ea.

JOHN PICKETT, R. D. 2, Canajoharie, N. Y., wants to buy any size pix NYO&W, B&M, D&H; also correspond with any fans interested in those roads.

FRANCIS PRIOR, 19 Champney St., Brighton 35, Mass., would like to correspond with boys wishing to form a railroad club.

(R) FRANCIS E. RIFFLE, R. F. D. 3, will sell *Railroad Magazine* '39 to date 25c ea., good cond. Westminster, Md., will buy rulebooks, emp. tts., and tr. ords. most roads, esp. PRR, B&O, and WM. Wants complete PRR calendars before '39.

(R) G. SAUDER, 1300 Dawes Rd., Muskegon, Mich., will sell old issues of *Railroad Magazine*, *Model Craftsman* mags., *Model Airplane News* and *Popular Science Monthly*.

JOHN SCHWITZNER, 9863 Koford Rd., Oakland 3, Calif., wants emp. tts. Please correspond what roads before sending to him.

(*) EUGENE H. SCHMIDT, 1345 Edanola Ave., Lakewood, Ohio, offers off. elec. ry. maps of Central Elec. Traffic Assn., dated 1929, size 2x3 ft., 50c ea., pp; also has 36 orig. builders plates of Southern Car Co., never printed, at $2.50 ea., or will sell entire lot.

JOHN W. SHOIN, 404 Prosperity, Sikeston, Mo., wants to correspond with train crews working on NP out of Tacoma, Wash.

GUSTAV SKOGERSON, 429½ E. Magnolia, Ft. Collins, Colo., will sell to best offer every issue of *UP* mag from Jan. '22 to Mar. '31, all good cond. except a few.

EDWARD C. SNYDER, 366 Greenwood Ave., Akron, Ohio, wants all the rr, streetcar, tts. and trolley pix of New York, also passes, train ords., trolley trsfs., mags., books, etc.

CLAIR R. STAIRRETT, Holmes Park, Missouri, wants pix of Kansas City Southern, St. Louis and San Francisco, Santa Fe rosters all rrs.; pix GM&O, Alton, Southern, L&N, RT&P, MoP, WP, SP, MKT, NG, Reading B&R, PRR locos and rolling stock, size 116, 127, 118, 120 and 3x8 builders pix. Send list. Answers all mail.

FRED C. STOES, Rt. 3, Box 490 Santa Cruz, Calif., wants to buy p.c. or size 116, 616 pix of DT&I engines Nos. 800-803 2-8-2, and 700-705 2-8-4, right and left hand views for use in Model building purposes. Would like to get in touch with someone in DT&I territory who can take good clear pix.

EDWIN O. TEFS, Jr., 184 Bowles Park, Springfield 4, Mass., wants any size pix or negs. all types of camelback engines, any rr. State price.

(R) WM. J. TEZON, 1217 Rural St., Boonville, Mo., will trade *Railroad Magazines*, good cond. for a Colt or Smith & Wesson revolver 32 or 38, in good cond. or for a pair 8 power prisins Binoculars. Write first.

T. EARL VAN SICKLE, Jr., Super-Exchange, Cranford, N. J., offers price list of interesting railroad material from Persia and India (souvenirs, literature, etc.). 3c postage. *East Indian Railway Magazine* '45 copy $1. Wants all US and foreign postage stamps.

BILL VIGRASS, 1494 Cohassett Ave., Lakewood 7, Ohio, will sell or trade size 116 pix of Youngstown & Southern (incl. PL&W), Ohio Pub. Serv.; Cleve. Trans. Sys.; Erie Trac.; C. U. T.; L&PS; KIL&T (ng); Laksd. & Mrblhd., for any juice, short line. Big 4, or NKP pix. Will trade CTS passes for same of other cities. State wants. Wants pix of Utah juice lines and FJ&G, PEPCO, any line running out of Youngstown O. esp. P-) and Y&OR.

(R) A. F. VON BLON, Jr., 1839 Texas Ave., San Antonio 1, Tex., wants *Railroad Magazines* before '36; *Moody's Steam RR.*; Switch keys; or anything about Texas rrs.

(R) FRANK C. WALKER, Box 85, Hitchcock, Tex., will sell or trade *Railroad Magazines* Mar., May, Nov. '45; *Model Craftsman*, 12 issues, *Model Railroaders Digest*, 3 issues, *Model Builders*, Mar. 41, Mar., Oct., Nov., Dec. '44, Jan. thru Dec. '45, *Locomotive Engineers Journals* (7 late issues); the *Model Railroaders* (22 issues, from Apr. '36 to July '44). Wants the *Model Railroader* Jan., Feb., July, Nov. '36 and Jan. '39. Send for complete list.

GEO. W. WALRATH, 1080 Warburton Ave., Yonkers 3, N. Y., wants trolley builder's plates, esp. Osgood Bradley, J. M. Jones, Gilbert, and Niles. Pays cash or offers in trade Stephenson, or Wasson plates.

LT. (jg) CLIFFORD WARD, 333 S. Jefferson, Saginaw, Mich., wants '09, '12, '41 *Loco. Cyclos.* in good cond.

L. D. WEBSTER, 124 Tompkins St., Cortland, N. Y., will trade Syracuse, Binghamton & New York, emp. tts. 1863 for any tt. dated before 1867, Currier & Ives prints, dime novels, boys papers before 1915, or large cents. Has old tts. for sale.

(R) FREDERICK M. WEISS, 112 Lincoln St., East Orange, N. J., will sell *Railroad Magazine* Apr., July, Aug, Sept., Nov., Dec., '34; Jan., Mar., May, Aug., Dec. '35; all '36, '37, 38, '39 (except Feb., July, Nov.), '40 (except Apr., Oct., Dec.), '41 (except Mar., Sept.), '42 (except Jan., Feb.), '43 (except Nov.); all '44 and Jan. '45 thru May '45, all with covers and unclipped. Also bound copy *Trains*, Vol. 3, Nov. '42-Oct. '43, unbound copies *Trains* Vol. 1 Nov. '40-Oct. '41, also Nov. '41 and Dec. '41. State what you want. 3c stamp for prices.

(R) J. F. WISNOM, Y. M. C. A., Greenwich, Conn., wants *Railroad Magazine* Dec. '29 to '40; also would like to buy or trade pix of any elec. st. ry. or interurban. Have some pix of now defunct Tonopah and Tidewater; also paperweight engine model.

(*) RICHARD H. YOUNG, 73 Union Ave., Clifton, N. J., disposing of surplus juice pix, size 116, fair cond. 15 assorted 25c. No list or returns.

(*) WILLIAM M. ZELLER, 1807 N. 21st St., East St. Louis, Ill., will swap East St. Louis, Ill., and St. Louis, Mo., bus and street car tokens for tokens of other cities.

Reader's Choice Coupon

Stories, features and departments I like best in the February issue are:

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....

Best photo is on page.....

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Occupation .....

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Model Trading Post

JOHN BELL, 1508 Howard Ave., Harrisburg, Pa., has std. gage crossovers, switches, 112-113-114-117 fr. cars, 18-19-190 pass. cars. Will sell or trade.

ROBR. DAVIDSON, Rock City Falls, N. Y. or G. W. Etzinger, 8811 Detroit Ave., Cleveland 2, Ohio, wants No. 1 gage (1¾") tinplate all kinds. Will pay $12-$15 elec. engines, good cond. $3-$5 frt. pass. cars Ives, Bing, Maerklin.

AL GIROUD, 19 Rue Lamande, Paris LF, France, Frenchman fan of Am. rds., wants NYC rd. Hudson type engine, Lionel 00 or AFH0.

ROBT. M. HOOD, Ideal Hobby Shop, 109 North Lake Ave., Albany 5, N. Y., wants all types of railroad eqpmt.

C. F. HARDER, 692 14th Ave., Paterson, N. J., has Lionel and Ives 0 gage and std. curved track, AF, 6 wheel trucks, steel track pins, 0 gage track fasteners.

LOYD KARN, 2713 So. 13th St., St. Louis 18, Mo., wants *Minature Railroad Service & Repair Manual* by Louis Hertz ('39); *Model Craftsman* '37 and '38.

FRANK KLECHKA, 1010 Connelly St., Clovis, N. M., wants AF Hudson type H0 locos. State cond. and price.

JOHN R. KOCH, Joliett, Pa., will sell or trade 00 gage ScaleCraft loco. Midland and Mantua track, switches, cars, etc., for 0 gage Lionel eqpmt. Answers all mail.

H. C. RUBBINS LANDON, South Lancaster, Mass., will sell Lionel Hiawatha loco; tender, 4 Milw. cars $22; other 0 gage cars and 75 ft. Lionel Wide radius track. Send for list.

GEO. D. MURRAY, 189 School St., Manchester, Conn., will sell *Model Craftsman* '35 thru '44; *Modelmaker*, Vols. and issues and *Baldwin Loco Mags.* Wants *Modelmaker*, '39 to June '40, and Vols. 15 and 16.

E. R. RICHTER, 28 Rockaway Ave., Brooklyn 33, N. Y., will swap complete sets of *Model Railroaders* '39 to '43, for *Loco* or *Car Encycl.*

(R) M. SACKOWITZ, 1200 East New York Ave., Brooklyn 12, N. Y., will sell Lionel Hiawatha Loco and 3 cars; also AF 0 locos 431 and 449. Will sell back issues of *Model Builder, Railroad Magazines* and *The Model Railroader.*

ED. SCHAEFER, West Lake, Guilford, Conn., would like to purchase 0 gage M. U. eqpmt.

A. HERBERT SPRINGER, Leetsdale, Pa., has two std. gage train sets; 0 gage sets, locos and extra cars. Wants 2624 Pass. car and switcher loco. List for stamp.

EARLE STERLING, 81 Bristol Rd., W. Somerville, Mass., wants H0 eqpmt., any type, or cond usable. Send list of types, price and cond.

HARRY A. SUMMERS, 1435 Ashland Circle, Norfolk 5, Va., wants to buy AF 43224 or 43226, Ives 1694, or any Ives before '20. Have whistle tender No. 2225 W and loco 252 to trade for above.

EARL THOMPSON, Fountain Valley School, Colorado Springs, Colo., will sell complete Lionel layout incl. 224, V, 3651, 3652, 3659, 2660, 2657, 2-711, 2-022, 82N, 76, 45N, 97, 134 and 100 assorted 072-0 track sections to highest bid received within 15 days.

WM. G. WOODARD, 2509 S. 34th St., Omaha 5, Nebr., has 0 gage 0-4-4 AF tinplate loco and cars and AF elec. type tinplate loco. Wants H0 eqpmt.

ROY YOXALL, 3737 Rumble St., New Westminster, B. C., wants H0 gage coaches, frt. cars, track. Send price list.

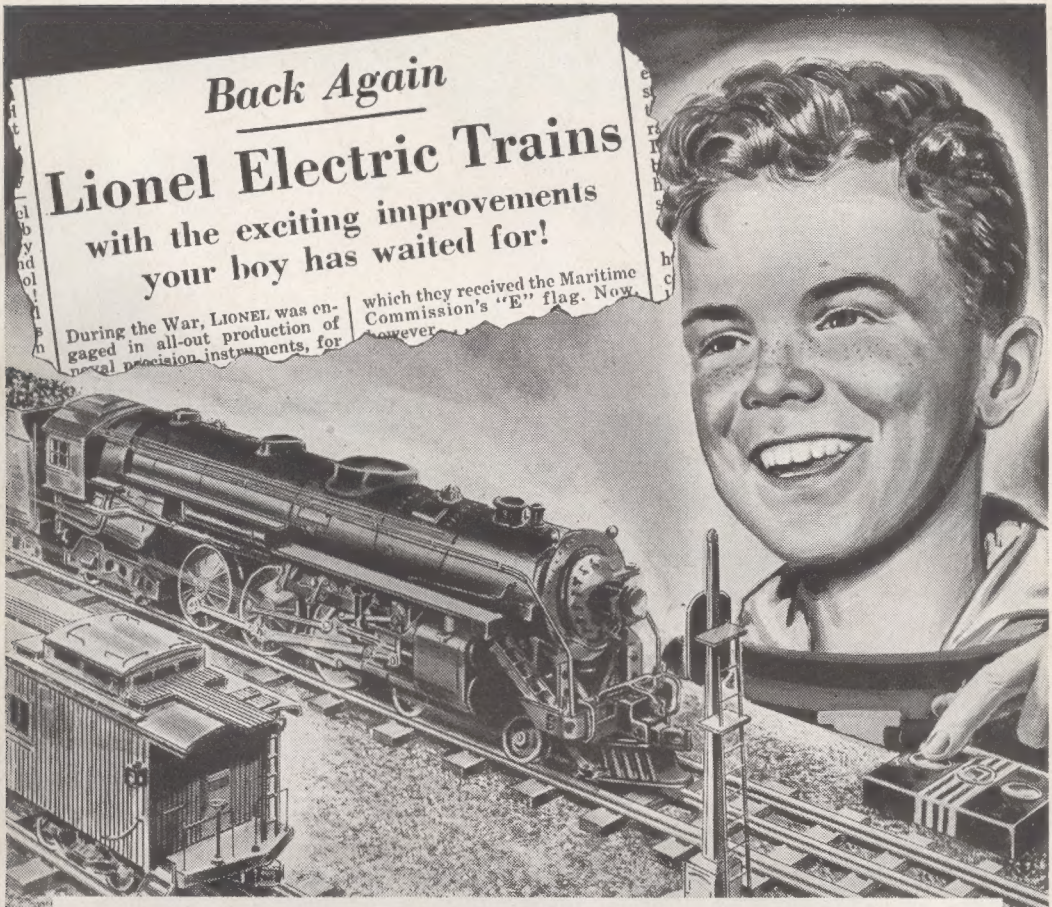
Lt. Col. RICHARD B. ZAHNISER, 925 N. Flood St., Norman, Okla., will pay cash for 0 gage Lionel or other 4-6-4 or larger loco and 0-6-0 switcher in good cond.

Flag Stop

INTERURBAN NEWS LETTER is planning an all-time roster of Pacific Electric equipment, expected to be issued early in 1946. This work, the result of extensive research into PE files, will be welcomed by juice fans. Copies of the December INL issue will be sent to interested persons on request. Address the Editor, 1414 South Westmoreland Ave., Los Angeles 6, Calif., and include a stamp for postage.

THE ST. LOUIS RAILWAY ENTHUSIASTS have announced a fan trip planned for the MoP as soon as passenger cars are available. Meetings open to general public are held at the Frisco Town Grove Station, 1500 S. Vanderwinter, at 7:30 p. m., on the 3rd Monday each month.

BUFFALO CHAPTER of National Railway Historical Society is revising its trip mailing list. Fans desiring notice of trips should contact Russell Shapley, 178 Box Ave., Buffalo 11, N. Y.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